Digital Appliances Division

SAMSUNG

Sixth Edition

Home Appliances
Error Code & Test Mode

Refer to the STG & the service manual on the GSPN for more information

Created By: Guanniu (Victor) Han

Index

Washer Error Codes…….. **1 ~ 18**
Washer Test Modes for front load style…….. **19 ~ 42**
Washer Test Modes for top load style……..…... **43 ~ 50**

Dryer Error Codes ……..…….. **51 ~ 54**
Dryer Test Modes…….…… **55 ~ 63**

Range / Cooktop / Wall Oven Test Mode & Error Code list…….. **65 ~ 88**

Microwave Oven / OTR Error Code List...……..... **89 ~ 91**

Dish washer Error Codes ……..……... **93 ~ 112**
Dish Washer Test Modes……..……... **113 ~ 126**

Refrigerator Error Code List ……..…….. **128 ~ 140**
Refrigerator Test Modes …… **141 ~ 188**

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Washer

Test Mode & Error Code list

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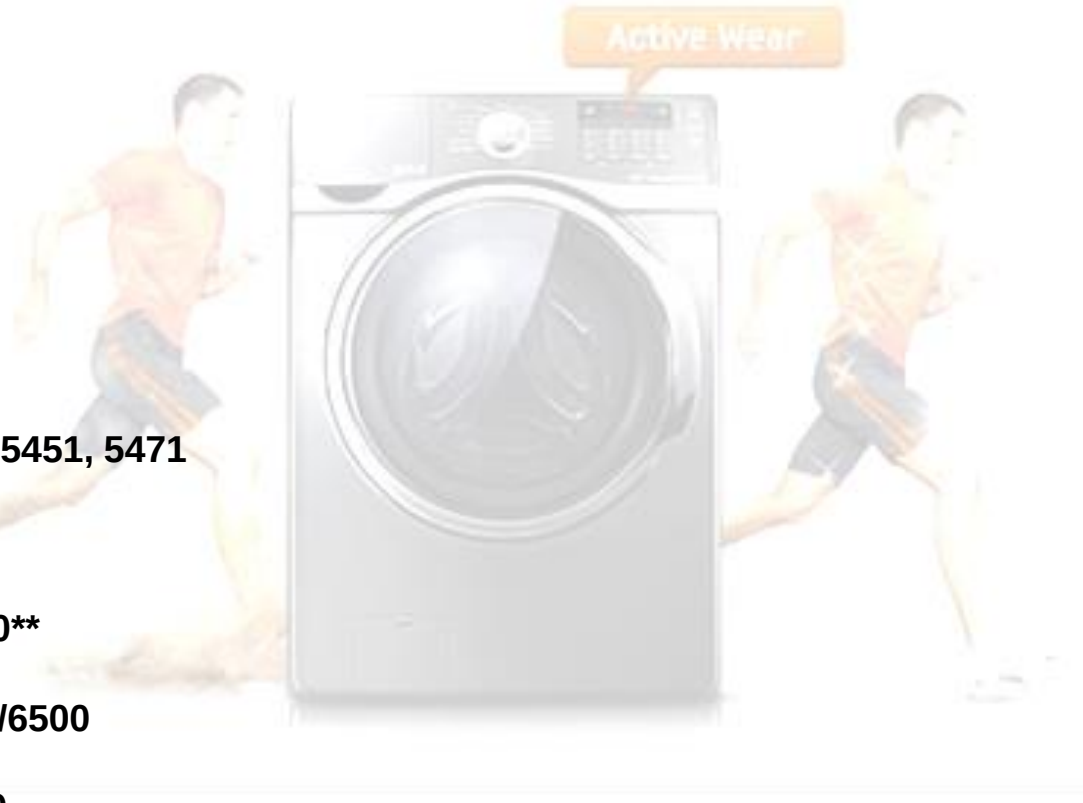
Applied Models



WA54M8750A*
WA52M7755A*
WA50M7450A*
WA45M3100A*
WA50K8600
WA45K7600
WA52J8780
WA48J7770AP
WA40J3000
WA56H9000
WA45H74, 72, 70
WA50F, 456, 422, 5451, 5471

WV60M9900**
WF45N6300**
WF45M5100, 5500**
WF50K7500
WF45K6200/6300/6500
WF56H9100/9000
WF45H6300, 6100
WF42H5700, 5600, 5500, 5400, 5200, 5100, 5000
WF203, 206, 210, 218, 220, 229, 231, 241, 306, 316, 317, 330, 331, 337, 339, 340, 350, 361, 364, 364, 393, 395, 397, 405, 409, 410, 419, 428, 431, 435, 448, 457, 461, 511, 520

WW22K6800

WF-J1254, WF-B1254

P801, P1001

Washer Test Mode & Error Code list

Index-1

Error Codes

Error codes for standard size front / top load washers …….. **1 ~ 3**
Error codes for flex washers ……...**4 ~ 5**
Error message for WA45M3100A*…… **6 ~ 8**
Error codes for WA40J3000E*……... **9 ~ 11**
Error codes for LCD display, models WF428/438/448, WF520, WF457.. **12 ~ 14**
Error codes for WW22K6800A*…..……... **15 ~ 16**
Error Codes for WF-J1254, WF-B1254……..**17**
Error Codes for P801, P1001, B1113…… **18**

Washer Test Mode & Error Code list

Index-2

Test Modes for front load style

Test Modes for Flex Washer WV60M9900*..... **19 ~ 22**
Test Modes for:
WF45N63*, WF45M51/55*, WF45K62/65*, WF50K75*, W22K68*..... **23**
Test Modes for WF42H5**, WF45H6**, WF56H9**..... **24**
Test Modes for WF393, 395, 397, 405..... **25**
Test Modes for WF409..... **26**
Test Modes for WF410..... **27**
Test Modes for WF419..... **28**
Test Modes for WF428/438/448..... **29**
Test Modes for WF330, 331, 340, 350..... **30**
Test Modes for WF431, 461..... **31**
Test Modes for WF210, 220, 361, 363..... **32**
Test Modes for WF231, 241, 364, 365..... **33**
Test Modes for WF520..... **34**
Test Modes for WF511..... **35**
Test Modes for WF435, 455..... **36**
Test Modes for WF337, 339..... **37**
Test Modes for WF457with WIFI..... **38 ~ 39**
Test Modes for WF- 203, 206, 306, 316, 317, 218, 229, & BFW36..... **40**
Test Modes for WF-J1254, WF-B1254..... **41**
Test Modes for P801, P1001, B1113..... **42**

Test Modes for top load style

Test Modes for WA45K71/7600*, WA50K8600*, WA54M8750*..... **43**
Test Modes for WA50M7050/7450*, WA52M7750/8750*..... **44**
Test Modes for WA52J80**, 87**, WA45H7000, 7200..... **45**
Test Modes for WA45M3100*..... **46**
Test Modes for WA40J3000..... **47**
Test Modes for WA50F**..... **48**
Test Modes for WA456, 422, 400..... **49**
Test Modes for WA5451, 5471..... **50**

Error codes for standard size front / top load washers

Code	Description
nd **5E / 5C**	Drain System Error. The water level fails to drop below the water level sensor signal reset point within 15 ~ 30 minutes after drain operation starts.
nF **4E / 4C**	Water filling system Error. Water filling time is over 16 minutes or there is no change in water level for 3 ~ 5 minutes after water supply starts.
nF1 **4E2/4C2**	Abnormal water temperature is sensed at the initial time of water supply. The hot/cold water hose connection is incorrect, thermistor, or PCB trouble.
LE1 **1E / 1C**	Water Level Sensor Error. Water level sensor input signal is out of range or there is a loose/bad wire connection on either pressure switch terminal or PCB terminal. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
LE / LC **LC1**	Water Leaking Error. The condition that water level drops below the water level sensor signal reset point is remained for 5 seconds or longer during the Wash/Rinse cycle operation. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
OE / OC	Over Fill Error. The condition that water level is at or above the overfill level is detected by the water level sensor. Once it occurs, unit will automatically drain out the water until the water level falls below the overfill level.
dE/dC	Door is detected as open while it is trying to lock the door.
FL **dE1/dC1**	Door lock trouble. Door fails to lock after 3 ~ 7 attempts.
LO	Door lock trouble. Door fails to unlock after 3 attempts.
dL	Door lock trouble. Door is open while the motor is operating.
dS	Door lock trouble. Door is open while it is trying to lock.
ddC	Add door switch contact error • Add door open/close switch fault. • Main PCB fault.
dC3	Add Door lock Switch Error • Add Door lock switch terminal is broken, loose / broken wire connection. • Add door lock switch fault. • Main PCB fault.

Error codes for standard size front / top load washers

Code	Description
dc **UE / Ub** **Ur**	Load balance issue or hall sensor Error. Drum imbalance or cabinet bump is detected by hall sensor during final spin. Extremely unbalanced load or Hall Sensor trouble which prevents the drum from spinning faster than 140 RPM ~ 400 RPM.
bE	Hall Sensor Error. Hall sensor signals received while motor is not operating.
3E* / 3C*	3E/3E1/3E2/3E3/3E8 Motor won't turn, no feedback signal from motor or over current condition been detected.
E3	No signal feedback from the hall sensor to MICOM. Locked motor, defective hall sensor, or PCB
2E **9E* / 9C***	2E / 9E1 / 9E2 Voltage for motor is higher / lower than specified limit. Abnormal power supply or PCB power control bus error.
E2 / bC2	Jammed Key. Any button is held for over 12 seconds or jammed.
7E	Silver care system Error. Silver care kit is running out, silver care PCB defective, main PCB defective, or wire connection problem.
8E	Vibration Sensor Error. Motor assy trouble. (For WF203 / BFW36 only)
8E / 8C	MEMS Sensor Error. Abnormal output from the sensor is maintained for 5 seconds or longer. (Over 4.5V or under 0.5V)
8E1/8C1	Front MEMS Sensor Error. Abnormal output from the sensor is maintained for 5 seconds or longer. (Over 4.5V or under 0.5V)
8E2/8C2	Rear MEMS Sensor Error. Abnormal output from the sensor is maintained for 5 seconds or longer. (Over 4.5V or under 0.5V)
HE / HC **HC***	Heater Error Abnormal high/low water temperature. Heater is open/shorted,
tE / tC **tE1 / tC1**	Thermistor or PBA trouble. No signal feedback from thermistor to PCB 5 seconds or longer.
tE4 / tC4	Temperature of the Intelligent Power Modules (IPM) of the PCB main is abnormal or the thermistor of the PCB main is defective.

Error codes for standard size front / top load washers

Code	Description
Hr	No heater relay operation when there should be. PCB relay trouble or abnormal thermistor.
Sr	No system relay operation when there should be. PCB relay trouble.
-	PCB Error. EEPROM Fault.
AE / AC	Communication Error between PCB main and PCB Sub Loose wire connectors, PCB main defective, or PCB Sub defective.
AC2	The diagnosis of the I/O Board communication check.
AE3 **AC3**	Communication Error between DR Modem and PCB main. Loose wire connectors, PCB main or DR Modem defective.
AE4 **AC4**	Communication Error between WIFI PCB and PCB main. Loose wire connectors, PCB main or WIFI PCB defective.
AE5 **AC5**	Communication Error between LCD display and PCB main. Loose wire connectors, PCB main or LCD PCB defective.
AE6 **AC6**	Communication Error between PCB main and PCB Inverter Loose wire connectors, PCB main defective, or PCB Inverter defective.
SF **SF1/2/3**	System Error, replace PCB main.
PE / PC	Clutch Motor Error. (Top Load Models Only) No clutch position ready signal feedback to PCB 15 seconds after the clutch motor starts.
PE1 **PC1**	Clutch Motor Hall Sensor Error. (Top Load Models Only) Clutch hall sensor signal is abnormal after the clutch position detection is completed.
PF	There is power failure during the wash/rinse operation. “PF” is not an error. It is to inform the user of power failure.
SUdS **Sd**	Suds is detected during the wash/rinse operation. Too much detergent been used.

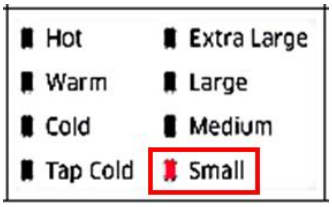
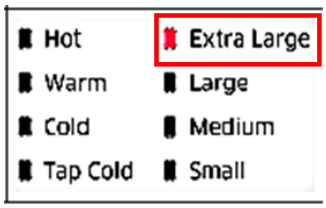
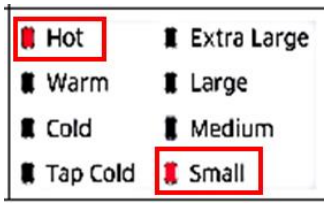
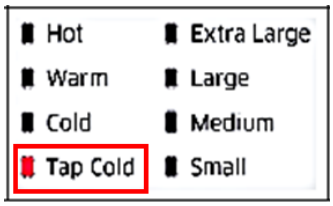
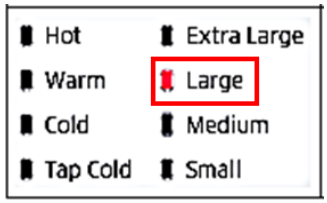
Error codes for Flex washer WV60M9900*

Code		Description
Upper	**Lower**	
1 5C	**5C**	Drain System Error. The water level fails to drop below the water level sensor signal reset point within 15 ~ 30 minutes after drain operation starts. 1. Drain pump / drain hose blockage. 2. Loose/bad wire connection on either pump terminal or PCB terminal. 3. Drain pump defective, PCB main defective.
1 4C	**4C**	Water filling system Error. Water filling time is over 16 minutes or there is no change in water level for 3 ~ 5 minutes after water supply starts. 1. Water supply faucet is not on. 2. Water pressure hose dropped off or been blocked. 3. Loose/bad wire connection on either valve terminal or PCB terminal. 4. Water valve defective, PCB main defective.
1 1C	**1C**	Water Level Sensor Error. 1. Water level sensor input signal is out of range, sensor defective; 2. Loose/bad wire connection on either pressure switch or PCB terminal. 3. PCB main defective. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
1 LC1	**LC1**	Water Leaking Error. The condition that water level drops below the water level sensor signal reset point is remained for 5 seconds or longer during the Wash/Rinse cycle operation. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
1 OC	**OC**	Over Fill Error. The condition that water level is at or above the overfill level is detected by the water level sensor. Once it occurs, unit will automatically drain out the water until the water level falls below the overfill level. 1. Suds accumulation inside the water pressure hose. 2. Water valve defective, or PCB main defective.
1 HC **1 HC***	**HC** **HC***	Heater Error Abnormal high/low water temperature. 1. Heater is open/shorted. 2. Loose/bad wire connection on either heater terminal or PCB terminal. 3. Thermistor defective, PCB main defective.

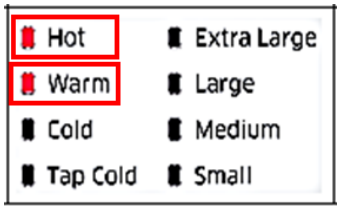
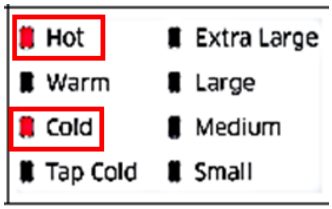
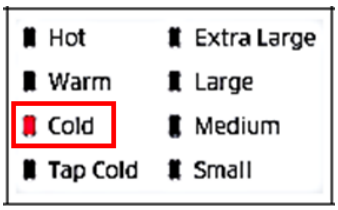
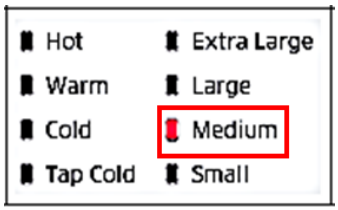
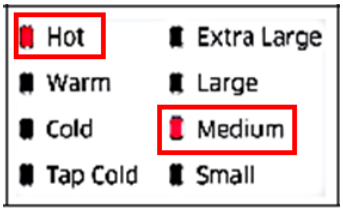
Error codes for Flex washer WV60M9900*

Code		Description
1 Ub	**Ub**	Load balance issue or hall sensor Error. 1. Drum imbalance or cabinet bump is detected by hall sensor during final spin. Extremely unbalanced load. 2. Hall Sensor trouble which prevents the drum from spinning. 3. PCB main defective.
1 3C*	**3C***	3E/3E1 ~ 3E8 - Motor won't turn, no feedback signal from motor or over current condition been detected. . 1. Over current condition due to the over load. 2. Loose/bad wire connection on either Motor/hall sensor terminal or inverter PCB terminal. 3. Motor / hall sensor defective, or inverter PCB defective.
1 9C*	**9C***	9E1 / 9E2 Voltage for motor is higher / lower than specified limit. Abnormal power supply or PCB power control bus error.
1 8C	**8C**	MEMS Sensor Error. Abnormal output from the sensor is maintained for 5 seconds or longer. (Over 4.5V or under 0.5V) 1. Loose/bad wire connection on MEMS sensor terminal or PCB terminal. 2. MEMS sensor defective, or PCB main defective.
1 AC	**AC**	Communication Error between PCB main and PCB Sub Loose wire connectors, PCB main defective, or PCB Sub defective.
1 tC	**tC**	Thermistor Error. No signal feedback from thermistor to PCB 5 seconds or longer. 1. Thermistor is open/shorted. 2. Loose/bad wire connection on either heater terminal or PCB terminal. 3. PCB main defective.
1 tC4	**tC4**	Temperature of the inverter PCB is too high. 1. Thermistor of IPM is open or short. 2. PCB main defective for upper washer. 3. Inverter PCB defective for lower washer.
1 dC **1 dC1**	**dC** **dC1**	Door lock Error 1. Door is detected as open while it is trying to lock the door. 2. Door lock defective or reed switch fault (for upper washer) 3. Loose/bad wire connection on either door lock terminal or PCB terminal. 4. PCB main defective.
1 dC4	**-**	DUAL TOP INNER DOOR OPEN 1. Top inner door is detected as open while it is trying to lock the door. 2. Loose/bad wire connection on either door lock terminal or PCB terminal 3. Door lock defective, or PCB main defective.

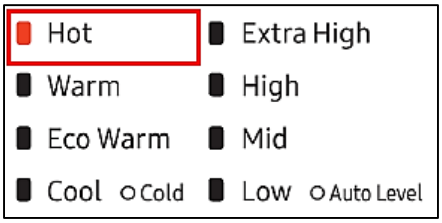
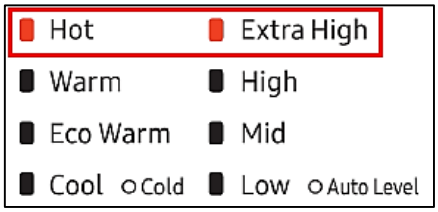
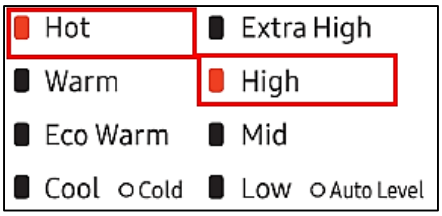
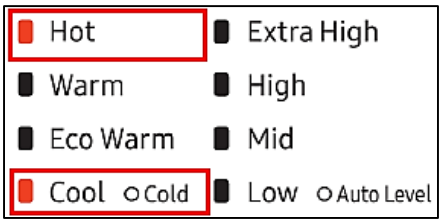
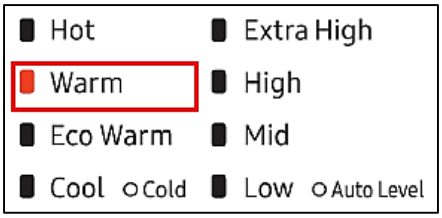
Error message for WA45M3100A*

Equivalent Code	Error Message	Description
nd	Drain Error 	Drain System Error. The water level fails to drop below the water level sensor signal reset point within 15 minutes after drain operation starts.
nF	Water Filling 	Water filling system Error. Water filling time is over 16 minutes or there is no change in water level for 3 minutes after water supply starts.
nF1	Water Supply 	Abnormal water temperature is sensed at the initial time of water supply. The hot/cold water hose connection is incorrect, thermistor or PBA trouble.
1E	**Water Level Sensor** 	Water Level Sensor Error. Water level sensor input signal is out of range or there is a loose/bad wire connection on either pressure switch terminal or PCB terminal. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
LE	Water Leakage 	Water Leaking Error. The condition that water level drops below the water level sensor signal reset point is remained for 5 seconds or longer during the Wash/Rinse cycle operation. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.

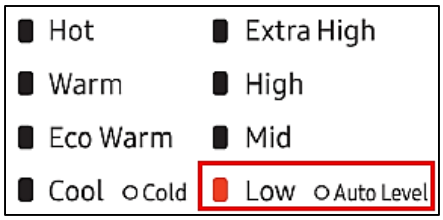
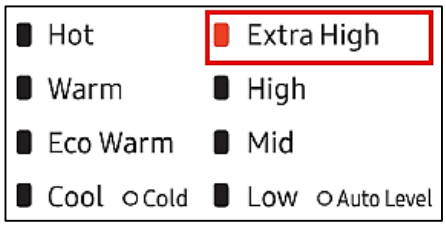
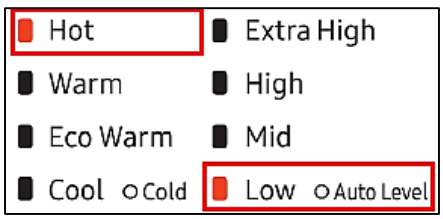
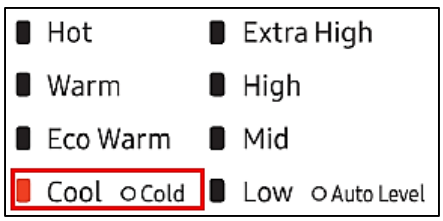
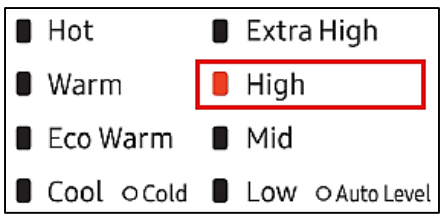
Error message for WA45M3100A*

Equivalent Code	Error Message	Description
dc	Unbalance 	Load balance issue or hall sensor Error. Drum imbalance or cabinet bump is detected by hall sensor during final spin. Extremely unbalanced load or Hall Sensor trouble which prevents the drum from spinning faster than 140 RPM ~ 400 RPM.
3E	Motor Error 	Motor won't turn, no feedback signal from motor or over current condition been detected. 1. Over current condition due to the over load. 2. Loose/bad wire connection on either Motor/hall sensor terminal or inverter PCB terminal. 3. Motor / hall sensor defective, or inverter PCB defective.
E2	Switch Error 	Jammed Key. Any button is held for over 30 seconds or jammed.
OE	Overflow Error 	Overflow Error The condition that water level is at or above the overfill level is detected by the water level sensor. Once it occurs, unit will automatically drain out the water until the water level falls below the overfill level.
tE	Thermistor 	Thermistor Error. No signal feedback from thermistor to PCB 5 seconds or longer. Thermistor is open/shorted. Loose/bad wire connection on either heater terminal or PCB terminal. PCB main defective.

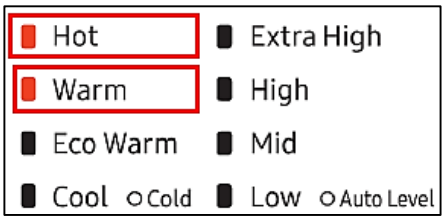
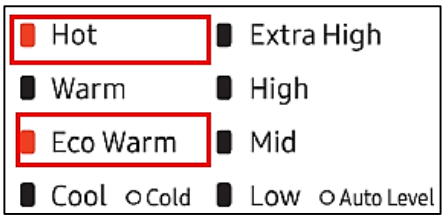
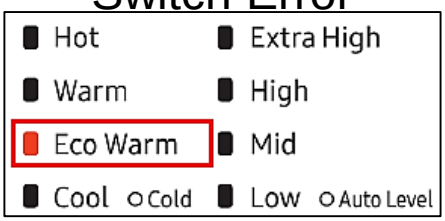
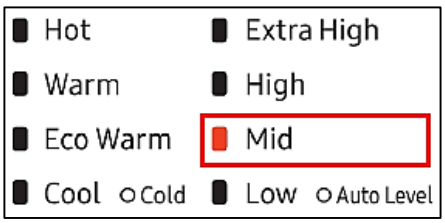
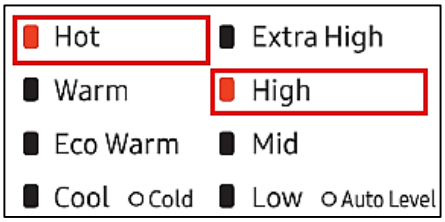
Error message for WA45M3100A*

Equivalent Code	Error Message	Description
FL	Door Error 	Door lock trouble. Lid is open when washer is running.
LO	Door Error 	Door lock trouble. Door fails to lock / unlock after 3 attempts. 1. Door lock defective or reed switch fault (for upper washer) 2. Loose/bad wire connection on either door lock terminal or PCB terminal. 3. PCB main defective.
dL	Door Error 	Door lock trouble. Door is open while the motor is operating.
8E1	MEMS Sensor 	MEMS Sensor Error. 1. Loose/bad wire connection on MEMS sensor terminal on the PCB Main. 2. MEMS sensor on the PCB main defective.
AE	Communication 	Communication Error between PCB main and PCB Sub. Loose wire connectors, PCB main defective, or PCB Sub defective.

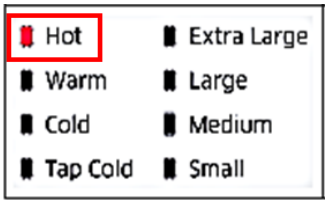
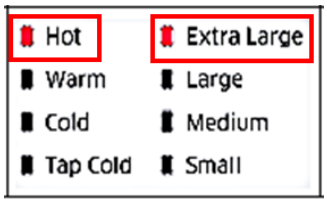
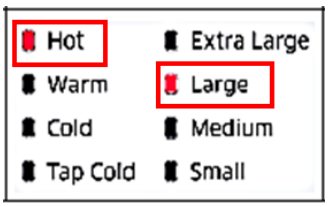
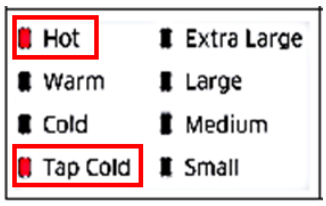
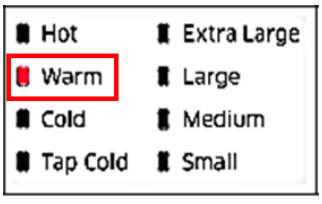
Error message for WA40J3000

Equivalent Code	Error Message	Description
nd	Drain Error 	Drain System Error. The water level fails to drop below the water level sensor signal reset point within 15 minutes after drain operation starts.
nF	Water Filling 	Water filling system Error. Water filling time is over 16 minutes or there is no change in water level for 3 minutes after water supply starts.
nF1	Water Supply 	Abnormal water temperature is sensed at the initial time of water supply. The hot/cold water hose connection is incorrect, thermistor or PBA trouble.
1E	Water Level Sensor 	Water Level Sensor Error. Water level sensor input signal is out of range or there is a loose/bad wire connection on either pressure switch terminal or PCB terminal. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
LE	Water Leakage 	Water Leaking Error. The condition that water level drops below the water level sensor signal reset point is remained for 5 seconds or longer during the Wash/Rinse cycle operation. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.

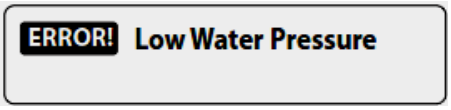
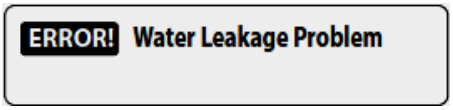
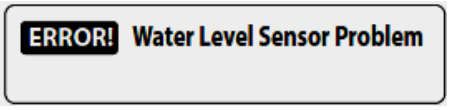
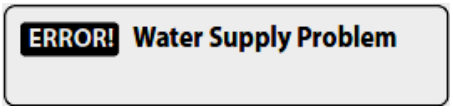
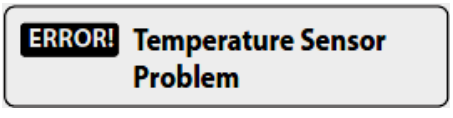
Error message for WA40J3000

Equivalent Code	Error Message	Description
dc	Unbalance 	Load balance issue or hall sensor Error. Drum imbalance or cabinet bump is detected by hall sensor during final spin. Extremely unbalanced load or Hall Sensor trouble which prevents the drum from spinning faster than 140 RPM ~ 400 RPM.
3E	Motor Error 	Motor won't turn, no feedback signal from motor or over current condition been detected. . 1. Over current condition due to the over load. 2. Loose/bad wire connection on either Motor/hall sensor terminal or inverter PCB terminal. 3. Motor / hall sensor defective, or inverter PCB defective.
E2	Switch Error 	Jammed Key. Any button is held for over 30 seconds or jammed.
OE	Overflow Error 	Overflow Error The condition that water level is at or above the overfill level is detected by the water level sensor. Once it occurs, unit will automatically drain out the water until the water level falls below the overfill level.
tE	Thermistor 	Thermistor Error. No signal feedback from thermistor to PCB 5 seconds or longer. Thermistor is open/shorted. Loose/bad wire connection on either heater terminal or PCB terminal. PCB main defective.

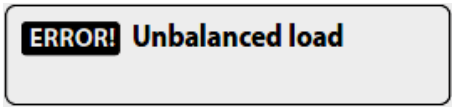
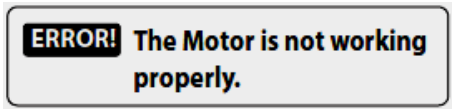
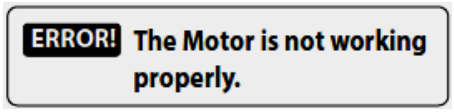
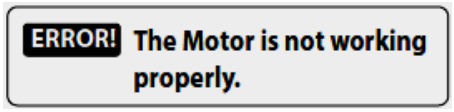
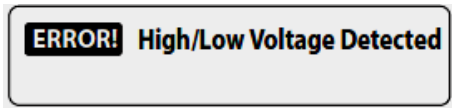
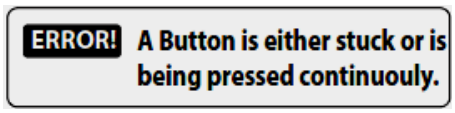
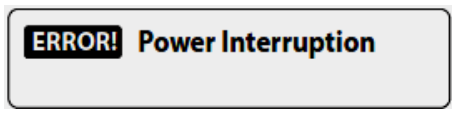
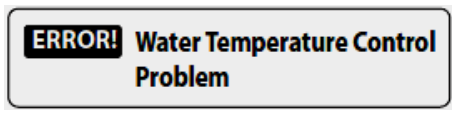
Error message for WA40J3000

Equivalent Code	Error Message	Description
FL	Door Error 	Door lock trouble. Lid is open when washer is running.
LO	Door Error 	Door lock trouble. Door fails to lock / unlock after 3 attempts. 1. Door lock defective or reed switch fault (for upper washer) 2. Loose/bad wire connection on either door lock terminal or PCB terminal. 3. PCB main defective.
dL	Door Error 	Door lock trouble. Door is open while the motor is operating.
8E1	MEMS Sensor 	MEMS Sensor Error. 1. Loose/bad wire connection on MEMS sensor terminal on the PCB Main. 2. MEMS sensor on the PCB main defective.
AE	Communication 	Communication Error between PCB main and PCB Sub. Loose wire connectors, PCB main defective, or PCB Sub defective.

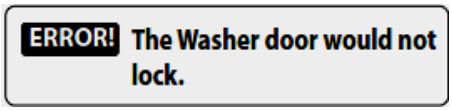
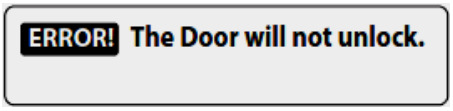
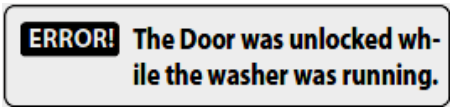
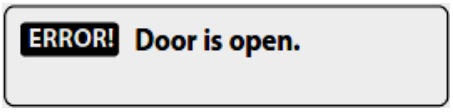
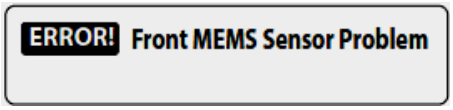
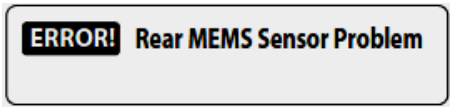
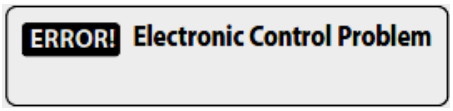
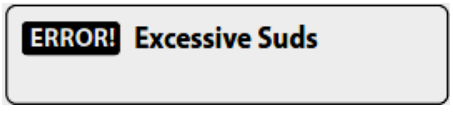
Error message for WF428/438/448, WF520, and WF457

Code	Error Message	Description
nd		Drain System Error. The water level fails to drop below the water level sensor signal reset point within 15 minutes after drain operation starts.
nF		Water filling system Error. Water filling time is over 16 minutes or there is no change in water level for 3 minutes after water supply starts.
nF1		Abnormal water temperature is sensed at the initial time of water supply. The hot/cold water hose connection is incorrect, thermistor or PBA trouble.
LE		Water Level Sensor Error. Water level sensor input signal is out of range or there is a loose/bad wire connection on either pressure switch terminal or PCB terminal. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
LE1		Water Leaking Error. The condition that water level drops below the water level sensor signal reset point is remained for 5 seconds or longer during the Wash/Rinse cycle operation. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
OE		Over Fill Error. The condition that water level is at or above the overfill level is detected by the water level sensor. Once it occurs, unit will automatically drain out the water until the water level falls below the overfill level.
tE		Thermistor or PBA trouble. Abnormal high/low water temperature.

Error message for WF428/438/448, WF520, and WF457

Code	Error Message	Description
dc		Load balance issue or hall sensor Error. Drum imbalance or cabinet bump is detected by hall sensor during final spin. Extremely unbalanced load or Hall Sensor trouble which prevents the drum from spinning faster than 140 RPM ~ 400 RPM.
bE		Hall Sensor Error. Hall sensor signals received while motor is not operating.
3E		Motor won't turn, no feedback signal from motor or over current condition been detected. .
E3		No signal feedback from the hall sensor to MICOM. Locked motor, defective hall sensor, or PCB.
2E		Voltage for motor is higher than specified limit. Abnormal power supply or PCB power control bus error.
E2		Jammed Key. Any button is held for over 30 seconds or jammed.
Hr		No heater relay operation when there should be. PCB relay trouble or abnormal thermistor.
Sr		No system relay operation when there should be. PCB relay trouble.

Error message for WF428/438/448, WF520, and WF457

Code	Error Message	Description
FL		Door lock trouble. Door fails to lock after 3 attempts.
LO		Door lock trouble. Door fails to unlock after 3 attempts.
dL		Door lock trouble. Door is open while the motor is operating.
dS		Door lock trouble. Door is open while it is trying to lock.
8E1		Front MEMS Sensor Error. Abnormal output from the sensor is maintained for 5 seconds or longer. (Over 4.5V or under 0.5V)
8E2		Rear MEMS Sensor Error. Abnormal output from the sensor is maintained for 5 seconds or longer. (Over 4.5V or under 0.5V)
AE		Communication Error between PCB main and PCB Sub. Loose wire connectors, PCB main defective, or PCB Sub defective.
PF	———	There is power failure during the wash/rinse operation. “PF” is not an error. It is to inform the user of power failure.
SUdS		Suds is detected during the wash/rinse operation. Too much detergent been used.

Error codes for WW22K6800AW

Code	Description
5C	Drain System Error. The water level fails to drop below the water level sensor signal reset point within 15 ~ 30 minutes after drain operation starts.
4C	Water filling system Error. Water filling time is over 16 minutes or there is no change in water level for 3 ~ 5 minutes after water supply starts.
4C2	Abnormal water temperature is sensed at the initial time of water supply. The hot/cold water hose connection is incorrect, thermistor, or PCB trouble.
1C	Water Level Sensor Error. Water level sensor input signal is out of range or there is a loose/bad wire connection on either pressure switch terminal or PCB terminal. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
LC	Water Leaking Error. The condition that water level drops below the water level sensor signal reset point is remained for 5 seconds or longer during the Wash/Rinse cycle operation. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
OC	Over Fill Error. The condition that water level is at or above the overfill level is detected by the water level sensor. Once it occurs, unit will automatically drain out the water until the water level falls below the overfill level.
dC/dC1	Door lock trouble. Door fails to lock after 3 ~ 7 attempts.
8C	MEMS Sensor Error. Abnormal output from the sensor is maintained for 5 seconds or longer. (Over 4.5V or under 0.5V)
HC / HC*	Heater Error Abnormal high/low water temperature. Heater is open/shorted,
tC / tC*	Thermistor or PBA trouble. No signal feedback from thermistor to PCB 5 seconds or longer.
Hr / Sr	No heater relay operation when there should be. PCB relay trouble or abnormal thermistor.

Error codes for WW22K6800AW

Code	Description
Ub	Load balance issue or hall sensor Error. Drum imbalance or cabinet bump is detected by hall sensor during final spin. Extremely unbalanced load or Hall Sensor trouble which prevents the drum from spinning faster than 140 RPM ~ 400 RPM.
bE	Hall Sensor Error. Hall sensor signals received while motor is not operating.
3C*	3E/3E1/3E2/3E3/3E8 Motor won't turn, no feedback signal from motor or over current condition been detected.
9C*	2E / 9E1 / 9E2 Voltage for motor is higher / lower than specified limit. Abnormal power supply or PCB power control bus error.
bC2	Jammed Key. Any button is held for over 12 seconds or jammed.
SUd	Suds is detected during the wash/rinse operation. Too much detergent been used.
AC	Communication Error between PCB main and PCB Sub Loose wire connectors, PCB main defective, or PCB Sub defective.
AC3	Communication Error between DR Modem and PCB main. Loose wire connectors, PCB main or DR Modem defective.
AC4	Communication Error between WIFI PCB and PCB main. Loose wire connectors, PCB main or WIFI PCB defective.
AC5	Communication Error between LCD display and PCB main. Loose wire connectors, PCB main or LCD PCB defective.
AC6	Communication Error between PCB main and PCB Inverter Loose wire connectors, PCB main defective, or PCB Inverter defective.
SF*	System Error, replace PCB main.

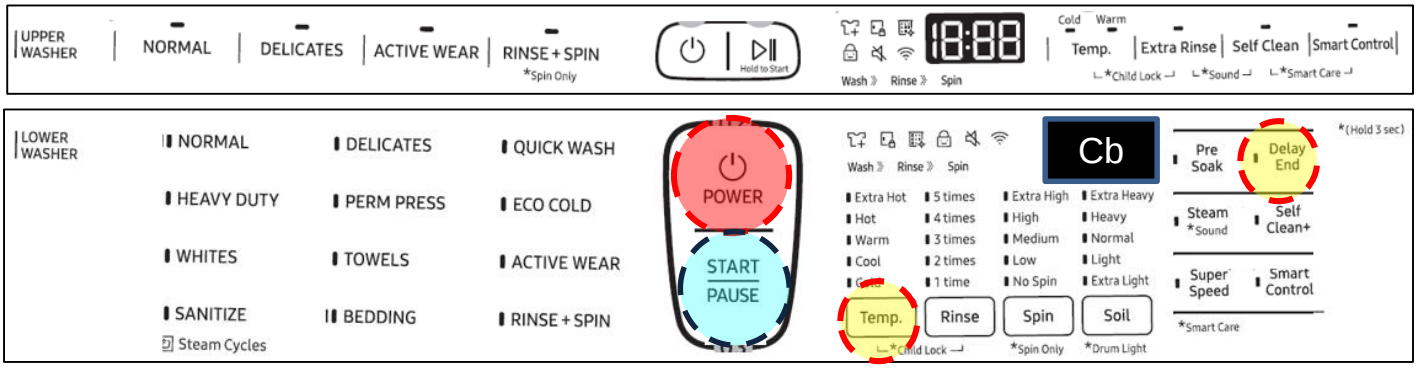
Error Codes for WF-J1254, WF-B1254

Code	Description
5E	Drain System Error The water level fails to drop below the water level sensor signal reset point within 10 minutes after drain operation starts.
4E	Water filling system Error Water filling time is over 10 minutes or there is no change in water level for 2 minutes after water supply starts.
IE	Water Level Sensor Error Water level sensor input signal is out of range or there is a loose/bad wire connection on either pressure switch terminal or PCB terminal. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
OE	Over Fill Error The condition that water level is at or above the overfill level is detected by the water level sensor. Once it occurs, unit will automatically drain out the water until the water level falls below the overfill level.
CE	Abnormal water temperature is sensed at the initial time of water supply. The hot/cold water hose connection is incorrect, thermistor or PCB trouble.
dE	Door lock Error Door is open or door lock trouble.
LE	Water Leaking Error The condition that water level drops below the water level sensor signal reset point is detected more than 4 times during the Wash/Rinse cycle operation. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
3E	Motor Tacho Error Motor Tacho signals are inputted less than 2 for 2seconds after Motor starts.
bE	Motor TRIAC Error Tacho signals are inputted more than 300 every 1second while operation.
tE	Thermistor Abnormal Error When 0.2V or below, or 4.5V or above is maintained for over 3 seconds.
UE	Load Problem Extremely unbalanced load, or hall sensor/motor problem.

Error Codes for P801, P1001, B1113

Code	Description
E1	Water filling system trouble. Water filling continues for over 20 minutes or there is no change in water level for 2 minutes after water supply starts.
E2	Drain system trouble. The water level frequency fails to drop below the Reset Water Level within 10 minutes after drain operation starts.
E3	Over Fill Error The condition that water level is at or above the overfill level is detected by the water level sensor. Once it occurs, unit will automatically drain out the water until the water level falls below the overfill level.
E4	Load Problem. Extremely unbalanced load, or hall sensor/motor problem.
E5	Heating system trouble. Water temperature rises more than 7°C in 1 min or less than 2°C in 10 min after heater is on.
E7	Water Level Sensor Trouble Water level sensor input signal is out of range or there is a loose/bad wire connection on either pressure switch terminal or PCB terminal. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
E8	Thermistor or PCB trouble Abnormal water temperature is sensed at the initial time of water supply.
E9	Water Leak Error. The condition that water level drops below the water level sensor signal reset point is detected more than 4 times during the Wash/Rinse cycle operation. Once it occurs, drain pump will be turned on automatically and will stay on regardless the operating condition.
Ea	Motor Tacho Error Motor Tacho signals are inputted less than 2 for 2seconds after Motor starts.
Eb	Motor TRIAC Error Tacho signals are inputted more than 300 every 1second while operation.
Ec	Thermistor Abnormal Error When 0.2V or below, or 4.5V or above is maintained for over 3 seconds.
Ed	Door lock Error Door is open or door lock trouble.

Test Modes for WV60M9900*

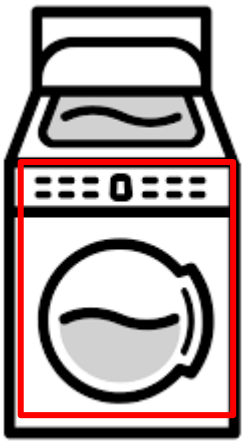


Calibration Mode for Lower Washer

How to enter the Calibration Mode for Lower Washer:

1. Remove any Laundry from the machine.
2. Turn on the unit, hold down the **Temp** Key and **Delay End** Key simultaneously for **3** seconds.
3. Press **Start/Pause** button to activate Calibration Mode, "**Cb**" appears on the display.

- The spin drum rotates clockwise approximately 2 minutes.
- When Calibration mode is finished, "**END**" appears on the display and the machine automatically turns off.

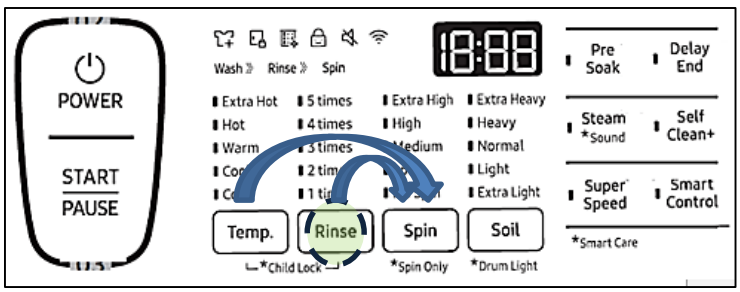


Note: Calibration mode will calibrate the weight sensing of the lower washer. This mode should be used when the Main board has been replaced or when the unit has been moved to insure proper weight sensing.

Data Display Mode *lower*

How to enter the Data Display Mode for Lower Washer:

1. Turn on the unit, hold down "**Temp**" > "**Spin**" > "**Rinse**" > "**Spin**" by sequence within 2 seconds to enter the Data Display Mode.
2. Press the "**Rinse**" button to advance the display modes. Wait 2 seconds to enter the test.

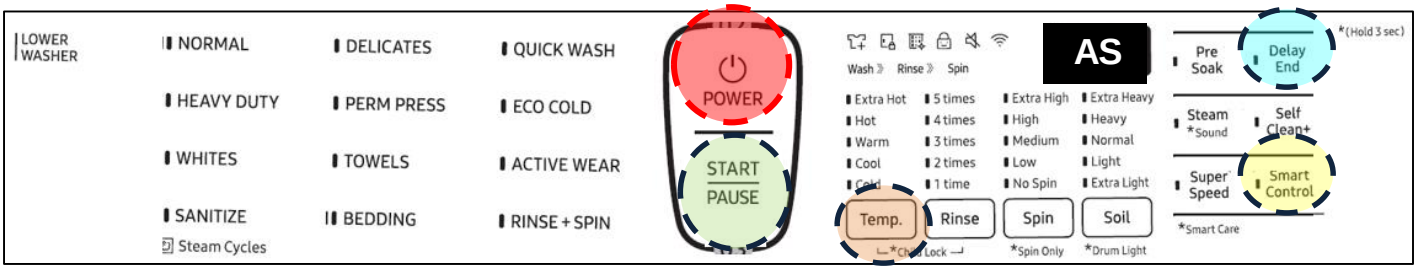


ID #	Testing Mode
001	Main MICOM Version
006	Last Check Code Recorded
007	Water Level Frequency
008	Water Temperature in Celsius
018	RPM Check

⇒

For step 7, (**D25 & 427**) appears on alternately. It indicates that the water pressure sensor frequency is approx. **25.427Khz** with Empty Tub and no water.
The Frequency will lower as water enters the tub.

Test Modes for WV60M9900*



How to enter the Test Mode Lower Washer (Smart Install Program):

1. Turn on the unit.
2. Press **Delay End** Key until **17:00** is displayed.
3. Hold down the **Start/Pause** button for 7 seconds or until **AS** appears with beeping sound.

After "**AS**" is displayed:

- Press "**start/pause**" button again to start the Automatic test mode.
- Press the "**Delay End**" Key to start the Manual test mode.

Each time the "**Delay End**" Key is pressed, it advance to next test step in sequence order.

After Auto Mode is complete, **Ot** will display if everything is OK, **nG** will display if there was an abnormal function or timing of a component operation.
A fault Check Code will display if a component doesn't work at all.

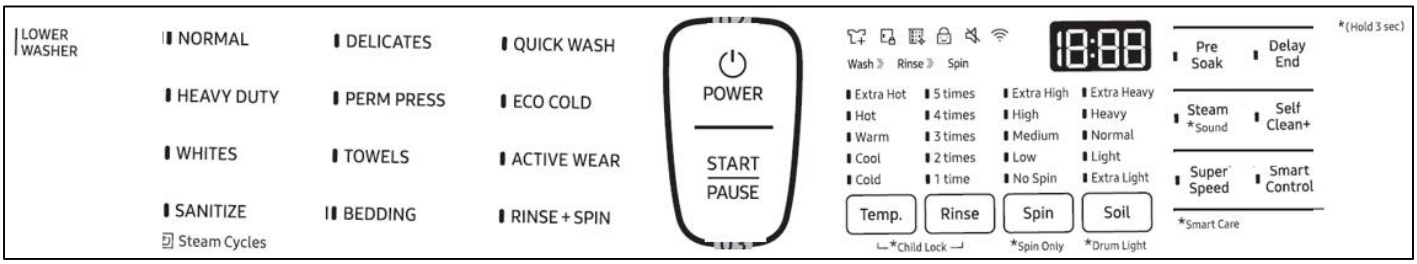
Sub Mode	Description
1	Door lock test
2	Drain pump operation test
3	Prewash valve operation test
Co	Cold water valve operation test
Ho	Hot water valve operation test
6	Heater operation test and Rinse operation test
7	Drain pump operation test (Duplicated)
8	Spin operation test The actual spin speed is showing on the display by RPM.
N/A	N/A
10	Door Unlock

Diagnostic Code Check Mode Lower Washer

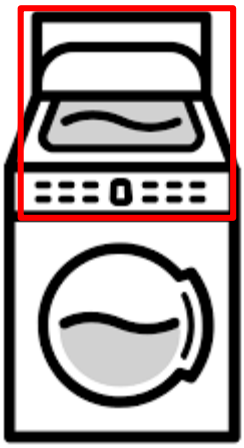
After "**AS**" is displayed:

- Press and hold the "**Temp**" Key to check the PCB software version.
- Press the "**Smart Control**" Key, "**Cr**" is displayed.
- Press **Spin** key 1 time, **0001** will display and change to display error code after 2 seconds.
- Keep on press **Spin** key to advance and see more stored codes, max 7 Error Codes.
- If no error, "**----**" will display. Note;

Test Modes for WV60M9900*



Data Display Mode *Upper*



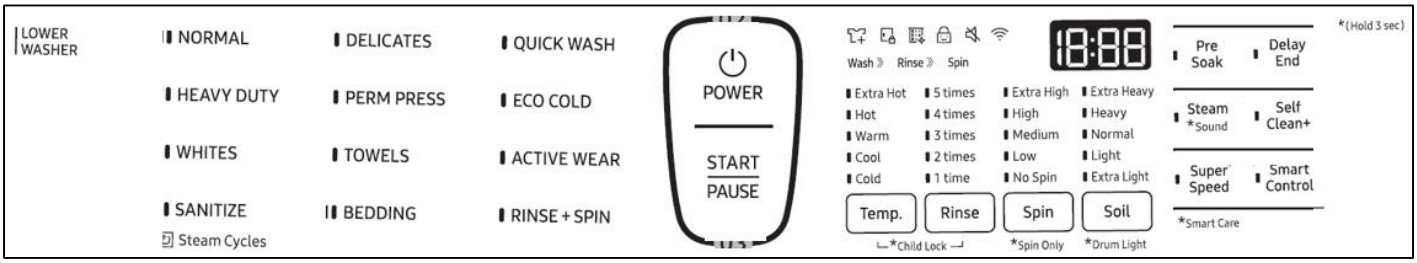
How to enter the Data Display Mode for Upper Washer:

1. Turn on the unit, hold down "**Temp**" > "**Self Clean**" > "**Extra Rinse**" > "**Self Clean**" by sequence within 2 seconds to enter the Data Display Mode.
2. Press the "**Extra Rinse**" button to advance the display modes. Wait 2 seconds to enter the test.

ID #	Testing Mode
001	Main MICOM Version
006	Last Check Code Recorded
007	Water Level Frequency
008	Water Temperature in Celsius
018	RPM Check

For step 7, (**D25 & 427**) appears on alternately. It indicates that the water pressure sensor frequency is approx. **25.427Khz** with Empty Tub and no water.
The Frequency will lower as water enters the tub.

Test Modes for WV60M9900*



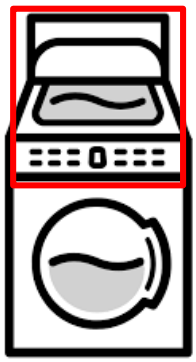
How to enter the Test Mode (Smart Install Program):

With the unit power off, press down the **Temp** Key, **Extra Rinse** Key, and **Power** Key simultaneously until **AS** appears with beeping sound.

After "**AS**" is displayed:

- Press the "**Start/Pause**" button again to start the Automatic test mode.
- Press the "**Extra Rinse**" Key to start the Manual test mode.
  Each time the "**Extra Rinse**" Key is pressed, it advance to next test step in sequence order.

After Auto Mode is complete, **Ot** will display if everything is OK, **nG** will display if there was an abnormal function or timing of a component operation
A fault Code will display if a component doesn't work at all.



Sub Mode	Description
1	Door lock test
2	Drain pump operation test
3	Cold water valve operation test
4	Hot water valve operation test
5	Shot Valve/Circulation pump- Heater – Agitator test.
6	Drain pump operation test (Duplicated)
7	Spin operation test The actual spin speed is showing on the display by RPM.
8	N/A
9	Door Unlock

Diagnostic Code Check Mode Upper Washer

After "**AS**" is displayed:

- Press the "**Smart Control**" Key, "**Cr**" is displayed.
- Press **Self Clean** 1 time, **0001** will display and change to display error code after 2 seconds.
- Keep on press **Self Clean** key to advance and see more stored codes, max 7 Error Codes.
- If no error, "**----**" will display. Note; max 7 Error Codes.

Test Modes for:

WF45N6300*, WF45M51/55*, WF45K62/65*, WF50K75*, WW22K68**

How to enter the Test Mode (Smart Install Program):

1. **Power** on the unit.
2. Press **Delay End** Key until **17:00** is displayed.
3. Hold down the **start/pause** button for **7** seconds or until **AS** appears with beeping sound

After "**AS**" is displayed, press the "**Delay End**" Key to start the test. Each time the "**Delay End**" Key is pressed, it advance to next test step in sequence order.

Sub Mode	Description
1	Door lock test
2	Drain pump operation test
3	Prewash valve operation test
Co	Cold water valve operation test
Ho	Hot water valve operation test
6	Heater operation test
	Rinse operation test
7	Drain pump operation test (Duplicated)
8	Spin operation test The actual spin speed will be showing on the display by RPM.

Diagnostic Code Check Mode:

After "AS" is displayed:

Press the following buttons to check the PCB software version

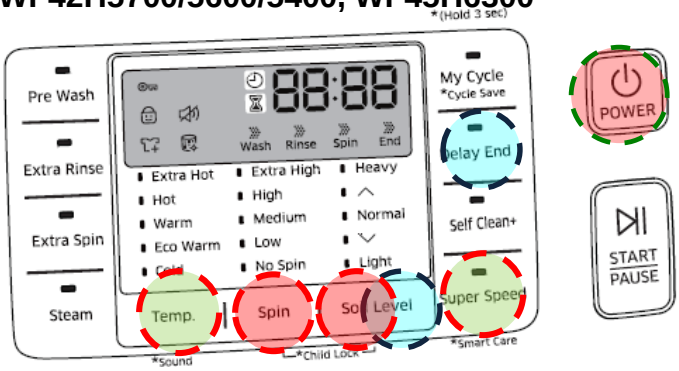
- "**Temp**" Key for WF22K6800A*
- "**Sound**" Key for WF45K6200*, WF45M5100*
- "**Steam**" Key for WF45K6500*, WF50K7500*, WF45M5500*

After "AS" is displayed:

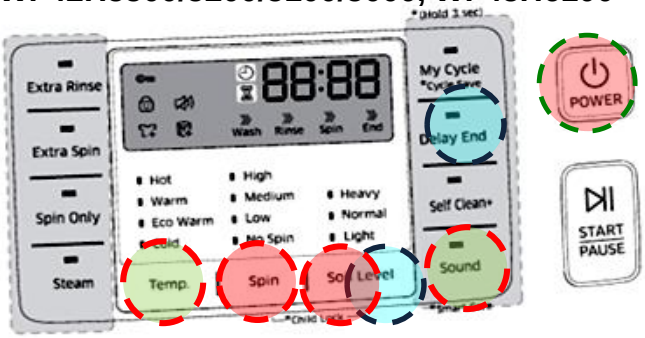
- Press the following buttons to Diagnostic Code Check Mode.
- "**Smart Care**" Key, "Cr" is displayed, (WF45K6200A*, WF45M5100A*)
- "**Super Speed**" Key, "Cr" is displayed. (WF45K6500A*, WF50K7500A*)
- "**Sound**" Key, "Cr" is displayed, (WF45M5500A*)
- "**Extra Rinse**" Key, "Cr" is displayed. (WF22K6800A*)
- Turn the jog dial clockwise to see the error code(s), max 7 Error Codes.
- If no error, "**----**" will display.

Test Modes for WF42H5**, WF45H6**, WF56H9**

WF42H5700/5600/5400, WF45H6300



WF42H5500/5200/5100/5000, WF45H6100



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second.
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Sound Key (WF42H5500/5200/5100/5000, WF45H6100) Water Heater Test.
     Super Speed Key (WF42H5700/5600/5400, WF45H6300, WF56H9**) Water Heater Test.
   - Soil Level Key : Drain Pump / Bubble Pump / Direct Valve Test

CAUTION : Quick Test will reset EEProm automatically.

2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Delay End and Soil Level Keys simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay End and Temp Keys simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Extra Rinse Key and Sound Key simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

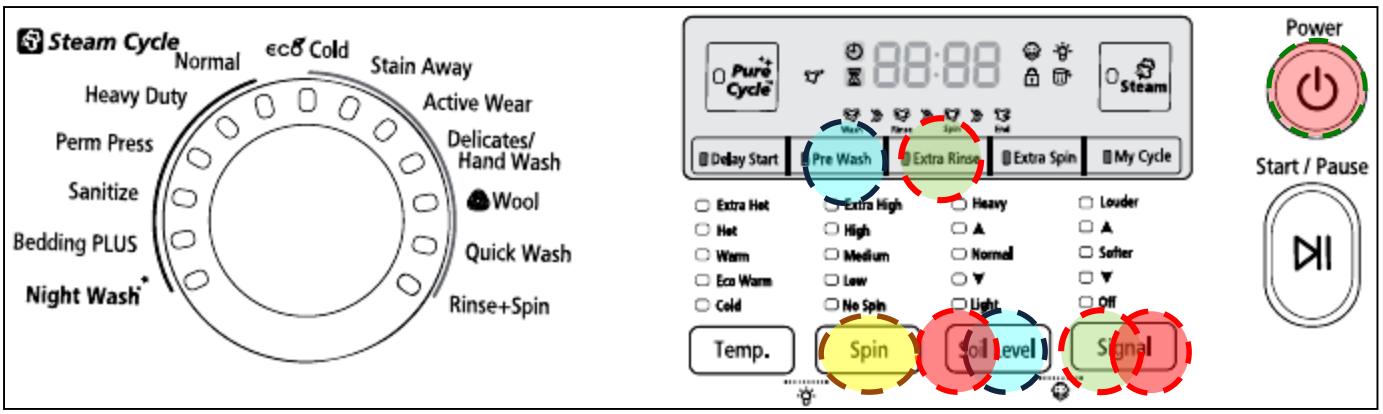
3. Diagnostic Code Check Mode

Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Delay End and Soil Level Keys simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WF393/395/397, 405



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Signal, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF405 is L949)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water Heater Test.
   - Signal Key : Drain Pump Test

CAUTION : Quick Test will reset EEProm automatically.

2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Soil Level Key and Prewash Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Rinse Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

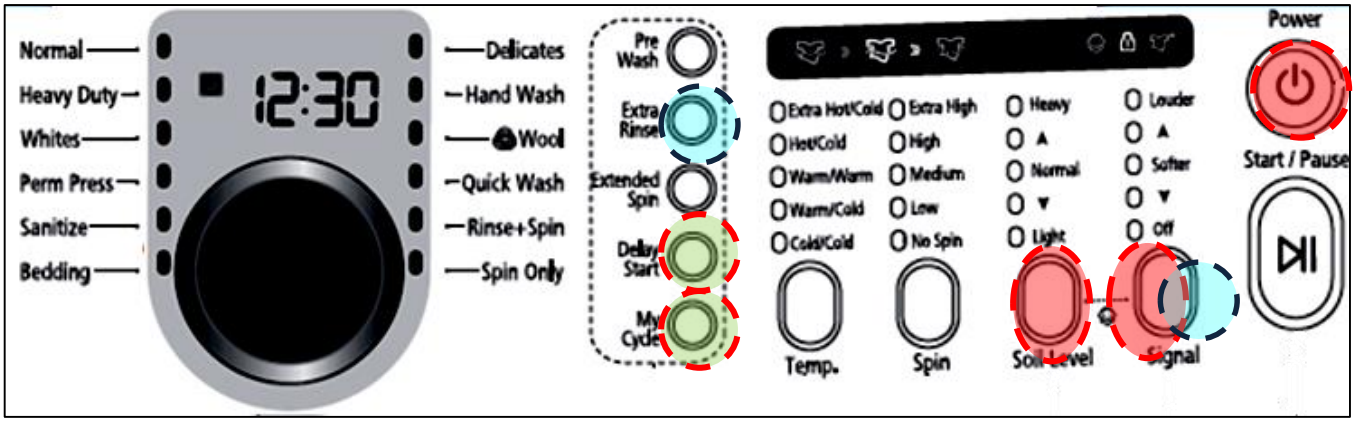
3. Diagnostic Code Check Mode

Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WF409



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Signal, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second (e.g. The S/W Version for WF409 is AE1B).
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water/Steam Heater Test.
   - Signal Key : Drain Pump Test.

CAUTION : Quick Test will reset EEProm automatically.

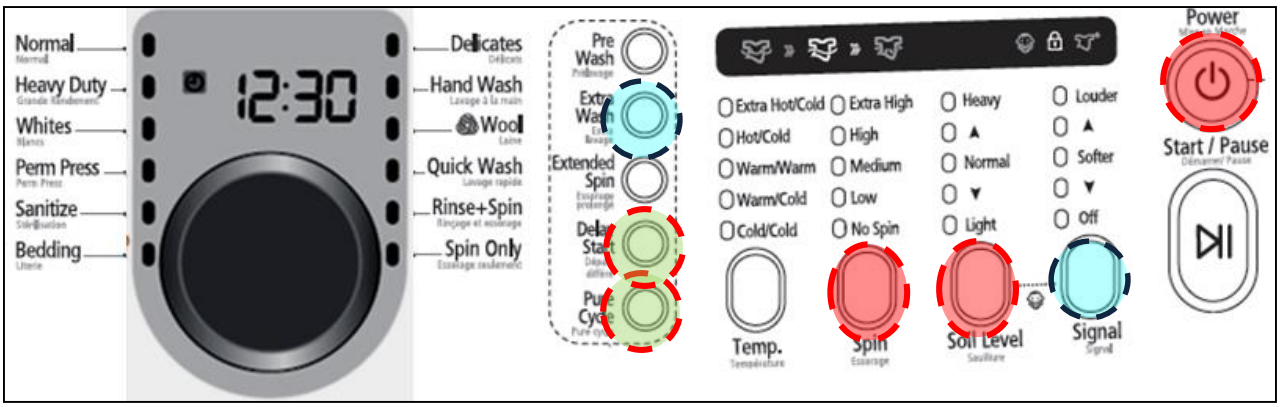
2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and My Cycle Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Rinse Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

Test Modes for WF410



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second.
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.

   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water Heater Test.
   - Signal Key : Drain Pump Test.

CAUTION : Quick Test will reset EEProm automatically.

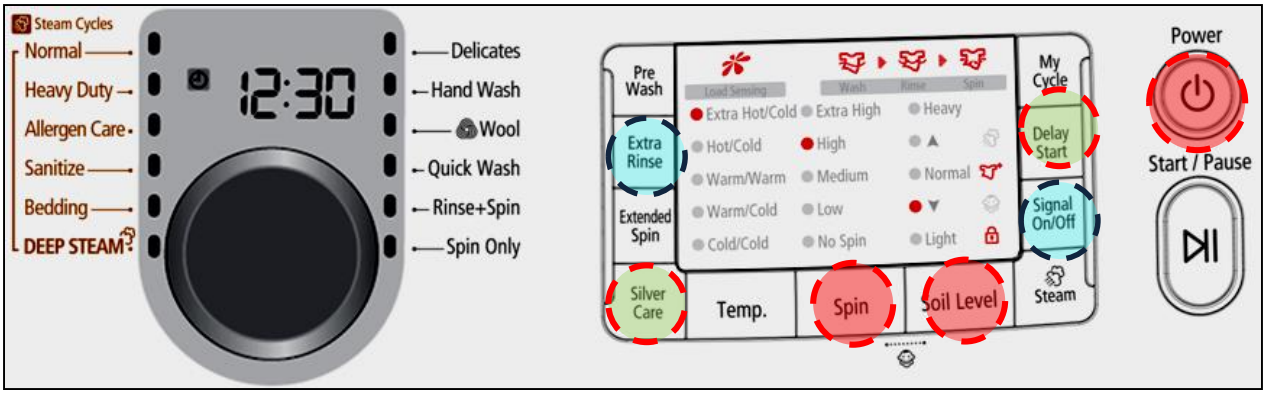
2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Wash Key simultaneously for 3 seconds or until the unit displays "0" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Pure Cycle Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Wash Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

Test Modes for WF419



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF419 is Hb03)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water/Steam Heater Test.
   - Steam Key : Drain Pump Test.

CAUTION : Quick Test will reset EEProm automatically.

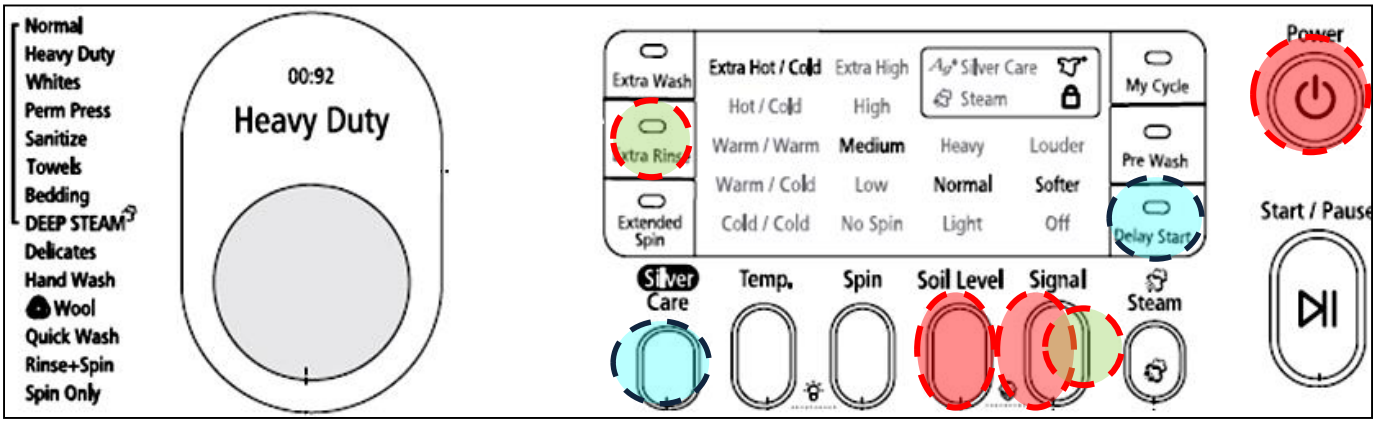
2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Silver Care Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Rinse Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

Test Modes for WF-428, 438, 448



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Signal, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF448 is 4C56)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.

   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Circulation/Drain Pump Test.
   - Signal Key : Water/Steam Heater Test

CAUTION : Quick Test will reset EEProm automatically.

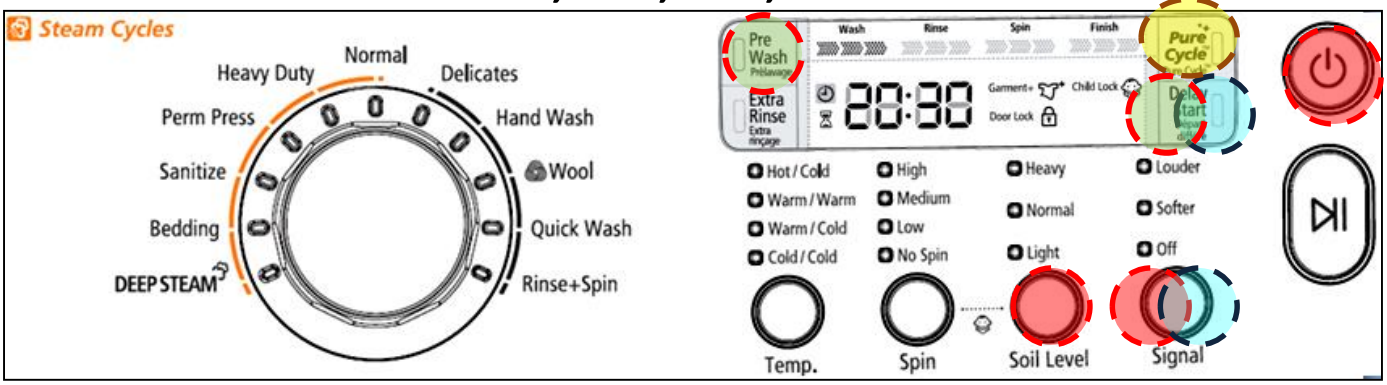
2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Silver Care Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Rinse Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

Test Modes for WF330, 331, 340, 350



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Signal, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF350 is E123)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water/Steam Heater Test.
   - Signal Key : Circulation/Drain Pump Test

CAUTION : Quick Test will reset EEProm automatically.

2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Delay Start Key simultaneously for 3 seconds or until the unit displays "0" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Prewash Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Delay Start Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

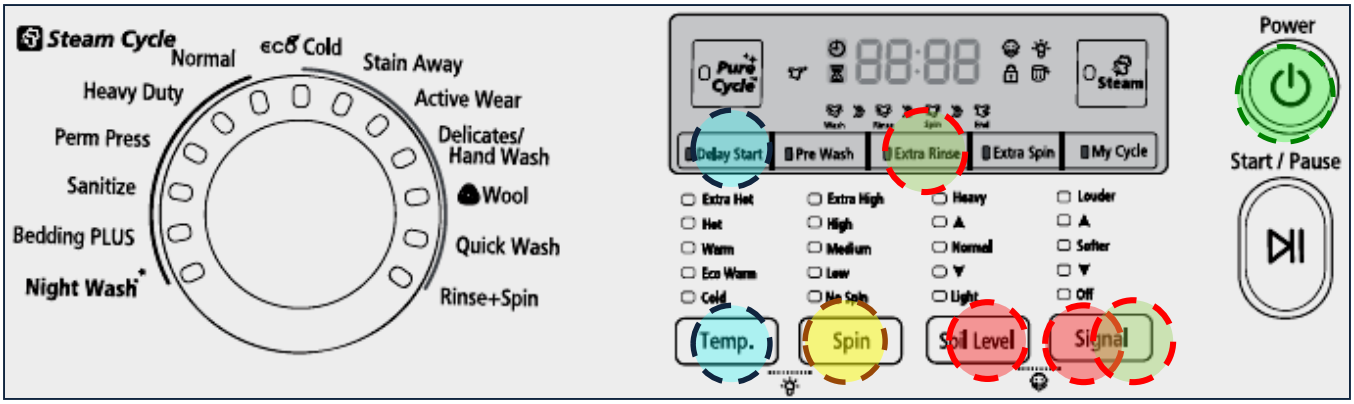
3. Diagnostic Code Check Mode

Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Signal Key and Delay Start Key simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "PureCycle" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WF431, 461



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Signal, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF431 is PN14)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water Heater Test.
   - Signal Key : Drain Pump Test

CAUTION : Quick Test will reset EEProm automatically.

2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Temp Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Rinse Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

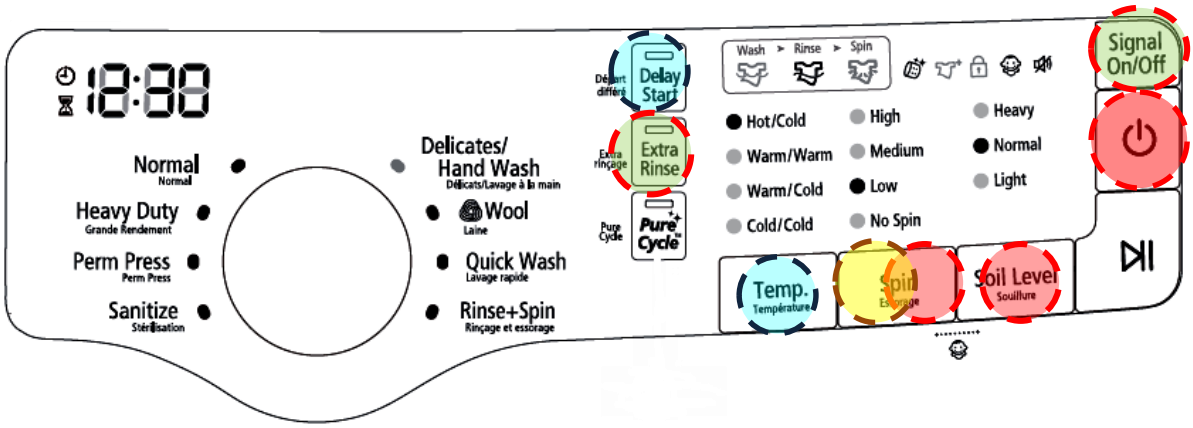
3. Diagnostic Code Check Mode

Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WF220, 210, 361, 363



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF210 is dE49)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water Heater Test. (WF220 only)
   - Signal Key : Drain Pump Test

CAUTION : Quick Test will reset EEProm automatically.

2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

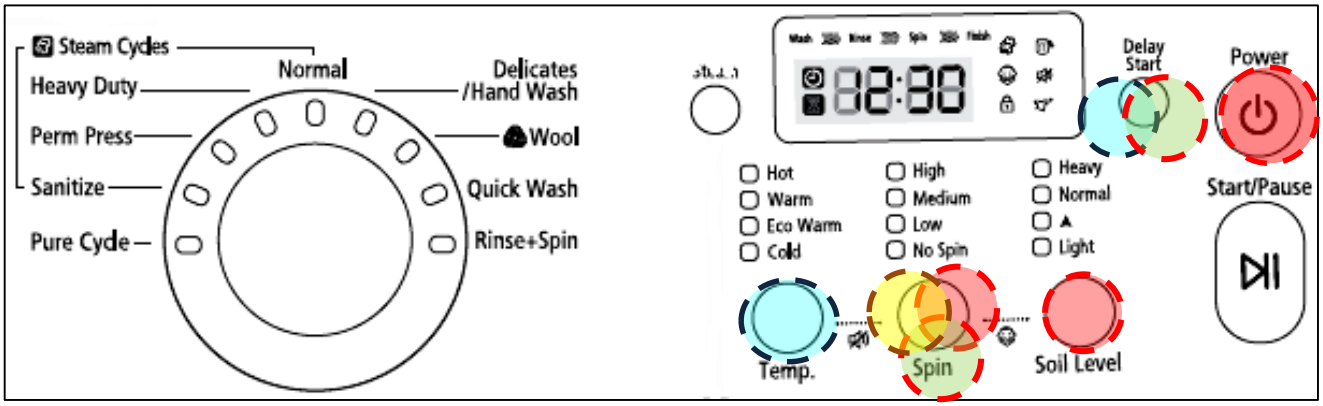
- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Temp Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Rinse Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

3. Diagnostic Code Check Mode

Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.
Testing Procedure:

1. Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WF231, 241, 364, 365



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF231 is dE45)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water Heater Test.
   - Delay Start Key : Drain Pump Test

CAUTION : Quick Test will reset EEProm automatically.

2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Delay Start Key and Spin Key simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Temp Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Delay Start Key and Spin Key simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

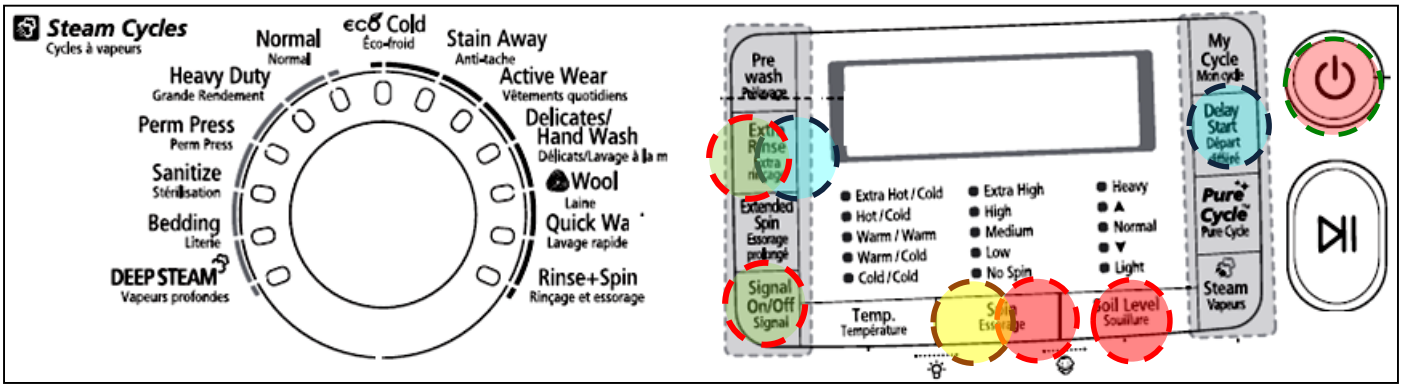
3. Diagnostic Code Check Mode

Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Delay Start Key and Spin Key simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WF520



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF520 is N90C)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water/Steam Heater Test.
   - Steam Key : Circulation/Drain Pump Test

CAUTION : Quick Test will reset EEProm automatically.

2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Extra Rinse Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Rinse Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

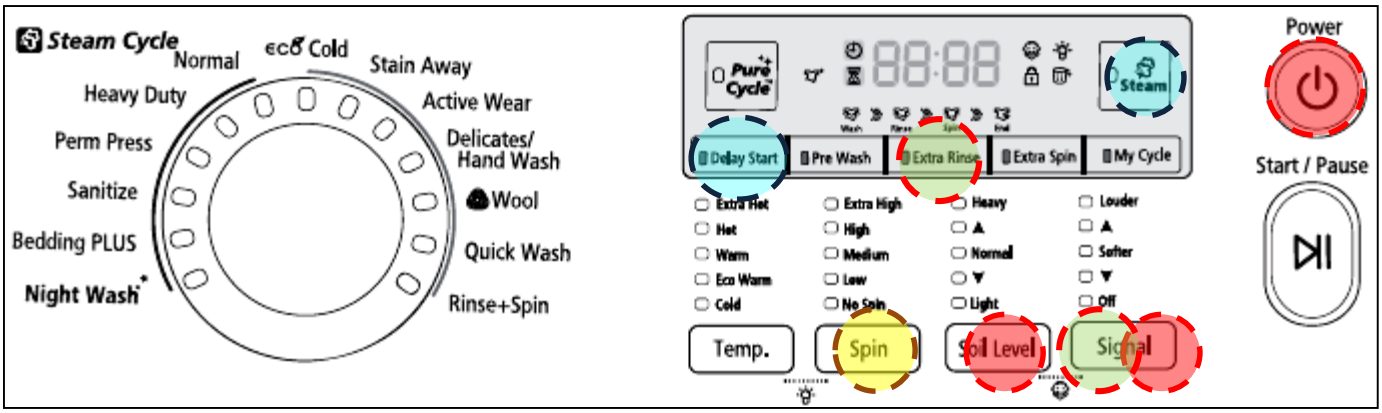
3. Diagnostic Code Check Mode

Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WF511



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF511 is AE23)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water Heater Test.
   - Steam Key : Drain Pump Test

CAUTION : Quick Test will reset EEProm automatically.

2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Extra Rinse Key and Signal Key simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Steam Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Extra Rinse Key and Signal Key simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

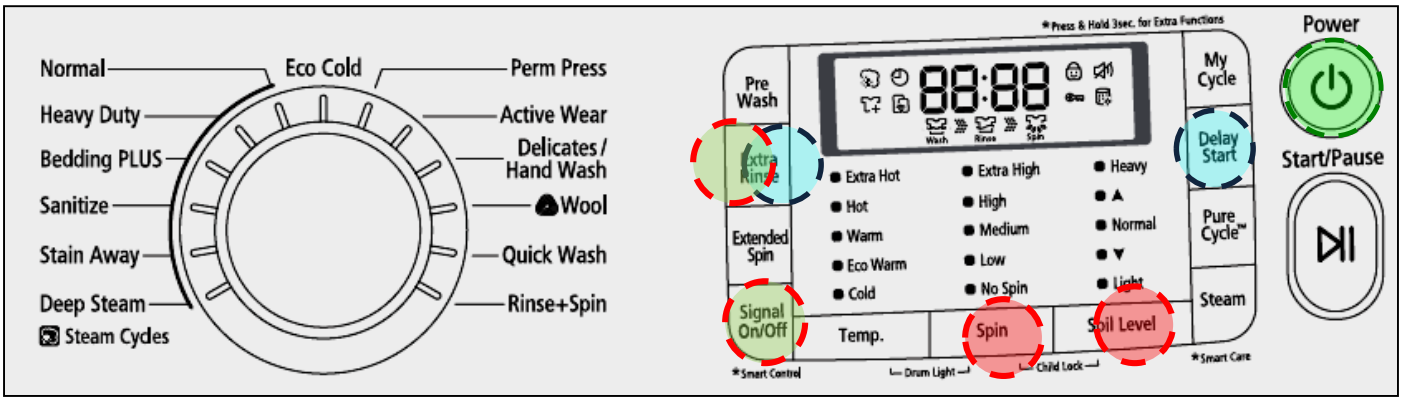
3. Diagnostic Code Check Mode

Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WF435, 455



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF455 is Y349)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Turn the Jog-Dial count clockwise once to remove the software version display.
5. Press the Spin Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test
   - Spin Key : Door Lock/Unlock Test
   - Soil Level Key : Water Heater Test.
   - Steam Key : Drain Pump / Bubble Pump

CAUTION : Quick Test will reset EEProm automatically.

2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Extra Rinse Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Extra Rinse Key and Signal Key simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

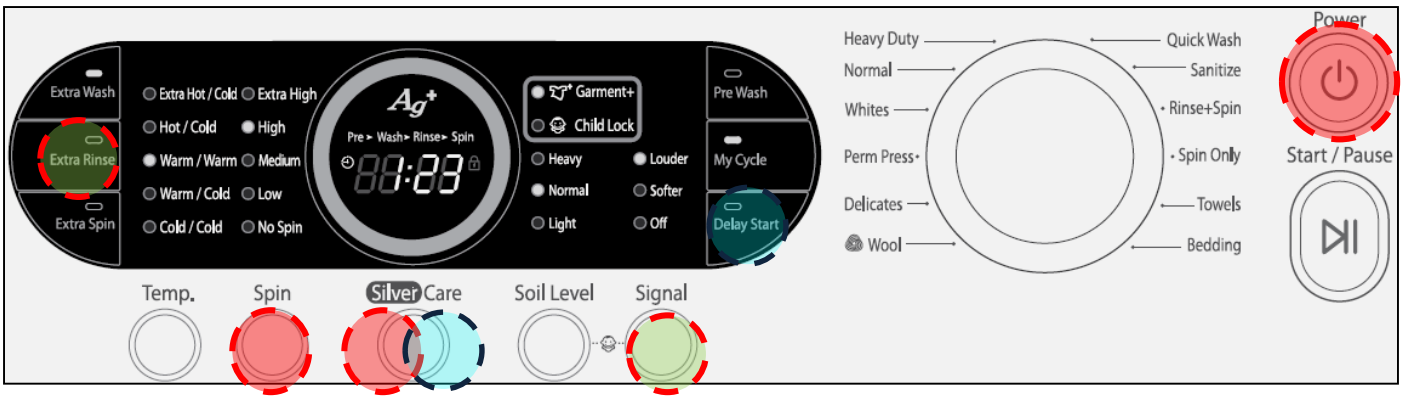
3. Diagnostic Code Check Mode

Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WF337, 339



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Silver Care, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF337 is F21)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Press the Silver Care Key to lock the door, then press the following keys to test various components. In case of the door can not be locked, turn the Jog-Dial count clockwise (once only) and then try again.
   - Temp Key : Water Valve Test
   - Spin Key : Motor Test
   - Silver Care Key : Door Lock/Unlock Test
   - Soil Level Key : Drain Pump Test.

CAUTION : Quick Test will reset EEProm automatically.

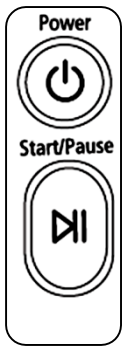
2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Silver Care Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Rinse Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

Test Mode & Error Check for WF457 with WIFI



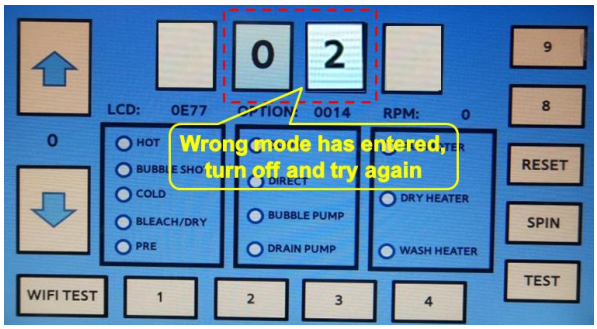
1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LCD touch sensor screen, verify PCB software version, and test most of the major components.

How to enter Quick Test Mode:

1. Before entering Test Mode, turn on the WiFi AP.
2. With the unit power off, press Start Button and Power Button simultaneously for less then one second.
3. Displays software version and other test options on the LCD touch sensor screen, reset EEProm automatically.
   The S/W Version for WF457 is Y343)

4. If ‘02’ or ‘01’ are displayed, it indicates that machine has entered different mode, turn off the machine and try again.



5. Once entering the Quick Test Mode, WiFi test starts automatically.
6. Once WiFi testing is done, displays WiFi OK and other tests can be performed .
7. If AE3 or AE4 error occurs, press Start Button to cancel the code and continue the test.
8. Press the following keys from the LCD display to test various components.

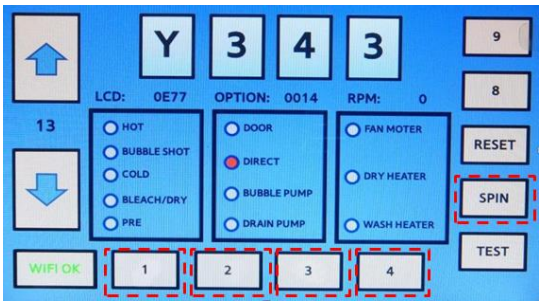
   No.1 Key : Water Valves Test

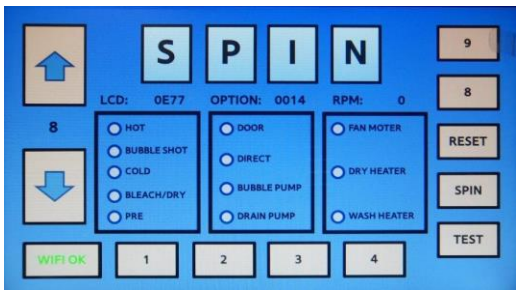
   No.2 Key : Door Lock/Unlock Test

   No.3 Key : Drain Pump / Bubble Pump Test

   No.4 Key : Water Heater Test

   Spin Key : Motor spin test.





* Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.

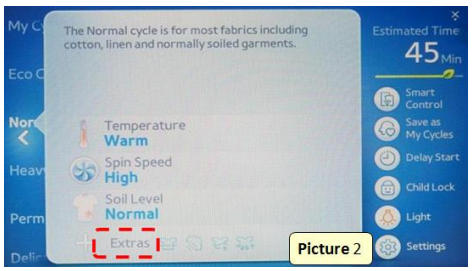
Test Mode & Error Check for WF457 with WIFI

2. Service Test Mode

How to enter:

1. Turn on the unit, select “Normal” operation, tap the circled area once as shown on picture 1, the display window will be changed.
2. Hold down the “Extras” icon from the new window as shown on picture 2 for 3 seconds or until the display off.
3. After a second off, display will light up again and unit has entered Service Test Mode.
4. Once entering the Service Test Mode, WiFi test starts automatically, and once WiFi testing is done, displays WiFi OK and other tests can be performed.

Picture 1



Picture 2

Picture 3

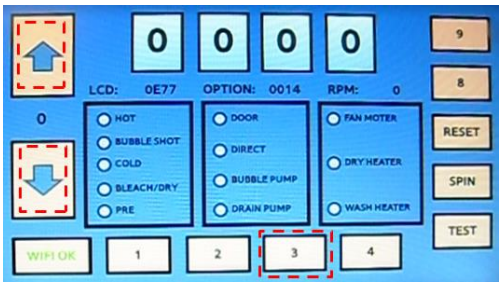
2-1. Quick Spin Test Mode

- Under the Service Test Mode, press Spin Icon to enter Quick Spin Test Mode, display “Spin”
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. Motor spin speed will be displayed in RPM.
- It will stay at its maximum speed for a moment till the unit exits the Quick Spin Test Mode.

2-2. Diagnostic Code Check Mode

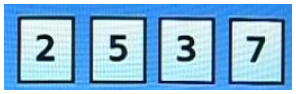
Under the Service Test Mode, press the “3” to start Diagnostic Code Check Mode, displays “d”.

1. To cycle through the error codes, press the up or down “Arrow” on the display panel.
2. When pressing the “arrow” in the same direction, it displays the error codes from the latest one.
3. When pressing the “arrow” in the opposite direction, it displays the error codes in the reverse order.

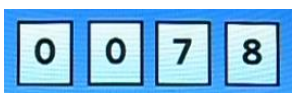


2-3. Input Data Check Mode

1. Under the Service Test Mode, press the “test” to start Input Data check Mode.
2. To cycle through the Input Data, press the up or down “Arrow” on the display panel.
3. When pressing the “arrow”, it displays the input data such as water level frequency, door lock statue, water temperature etc in sequence.
   (water temperature is displayed in both Fahrenheit and Celsius.)

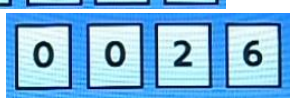


Water Frequency



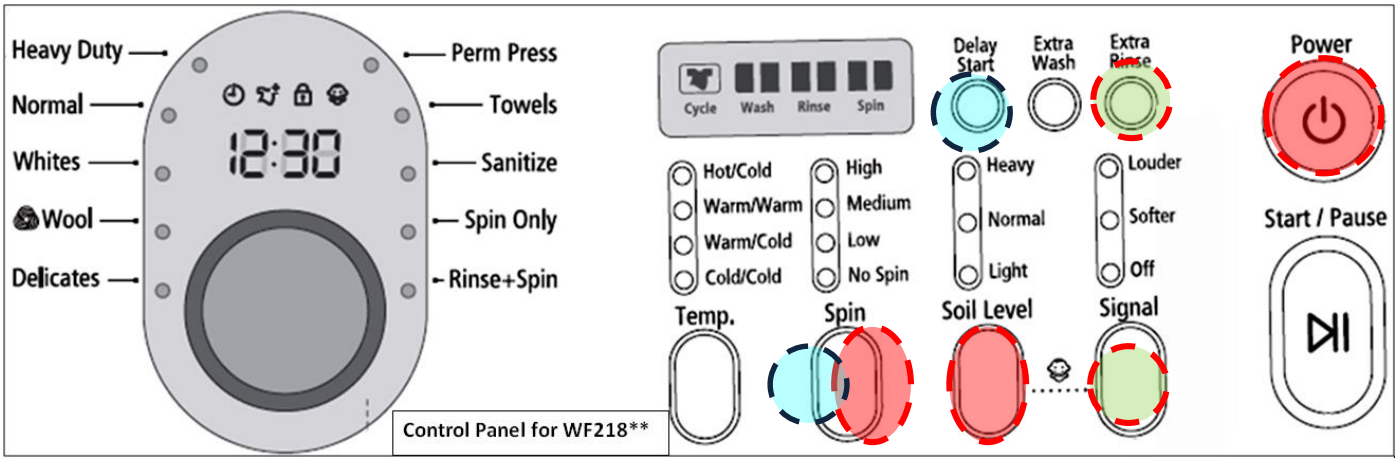
Water Temp in Fahrenheit

Door lock statue (Unlocked)



Water Temp in Celsius

Test Modes for WF- 203, 206, 306, 316, 317, 218, 229, & BFW36



1. Quick Test Mode (Component Test)

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components, except the motor high-speed spin.(See 2 below)

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second.
   (e.g The S/W Version for WF218 is 2E23, USA for WF203)
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Press the soil Level Key to lock the door, then press the following keys to test various components. In case of the door can not be locked, turn the Jog-Dial count clockwise (once only) and then try again.
   - Temp Key : Water Valve Test
   - Spin Key : Motor Test
   - Soil Level Key : Door Lock/Unlock Test
   - Signal Key : Drain Pump Test.

CAUTION : Quick Test will reset EEProm automatically.

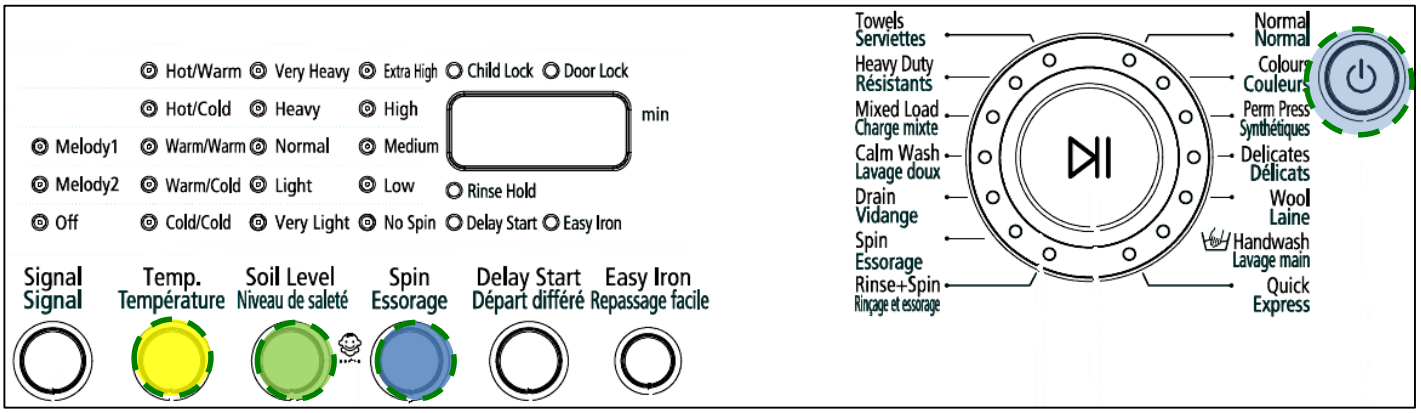
2. Service Test Mode (Spin Test)

Quick Spin Test Mode is used to test the motor for high speed spin. During the test, motor spin speed will be displayed in RPM.

Testing Procedure:

- Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0" and sends out beeping sound to enter Service Test Mode.
- Under the Service Test Mode, hold down the Delay Start Key and Spin Key simultaneously for 3 seconds to enter Quick Spin Test Mode.
- Once the washer is set to the Quick Spin Test Mode, the unit will start to spin and will reach its maximum spin speed. It will stay at its maximum speed for a moment before the unit exits the Quick Spin Test Mode.
- To exit Service Test Mode, hold down the Signal and Extra Rinse Keys simultaneously for 3 second again, or simply press the Power Key to turn off the washer.

Test Modes for WF-J1254, WF-B1254



How to enter :

1. With the unit power off, hold down “Soil Level, Spin, and Power” Keys simultaneously, if doesn’t work, then hold down “Soil Level, Temp, and Power” Keys instead.
2. All LED’s light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WF-J1254 is 8F 02)
   - If there is a PCB software version error, “EEEE” will be displayed.

Once the unit is entering the Test Mode, EEProm will be reset automatically.

Component Test

Under the test mode, press the following keys to test various components.

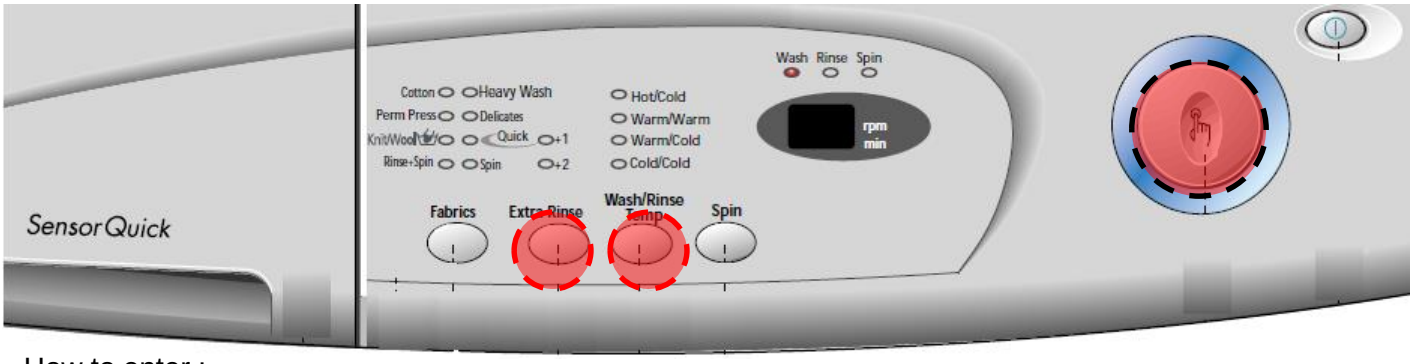
- Temp Key : Water Valve Test
- Soil Level Key: Motor Test
- Spin Key : Drain Pump Test.

Sequence/cycle Test

Under the test mode, press the start button to start the test & also advance the test cycle in sequence order.

Display	Related parts	Note
H	Inlet valves, Water level switch, & Motor	Press Start Button, unit fills water until the water level reaches the wash water level and then starts the wash cycle. •All 3 water valves will be opened at same time.
H H	Motor, Heater, &Thermistor	There is no heater for most of the units. Press the Start Button, unit will just continue with the wash cycle. Press the Start Button again to skip this step.
L	Inlet valves, Water level switch, & Motor	Press Start Button, unit fills water until the water level reached the rinse water level and then start the rinse cycle. •All 3 water valves will be opened at same time.
S	Water level switch, Drain Pump, & Motor	Press the Start Button, unit drains out water . Spin cycle starts after the water been drained out. It starts to spin from low speed until reaches the highest spin speed. •LED display indicators will light up one by one which is corresponding the spin speed starts from “No spin” till “Extra high spin”.
•All tests must be stopped manually. •If any component defective, an error code will occur and machine will be stopped.		

Test Modes for P801, P1001, B1113



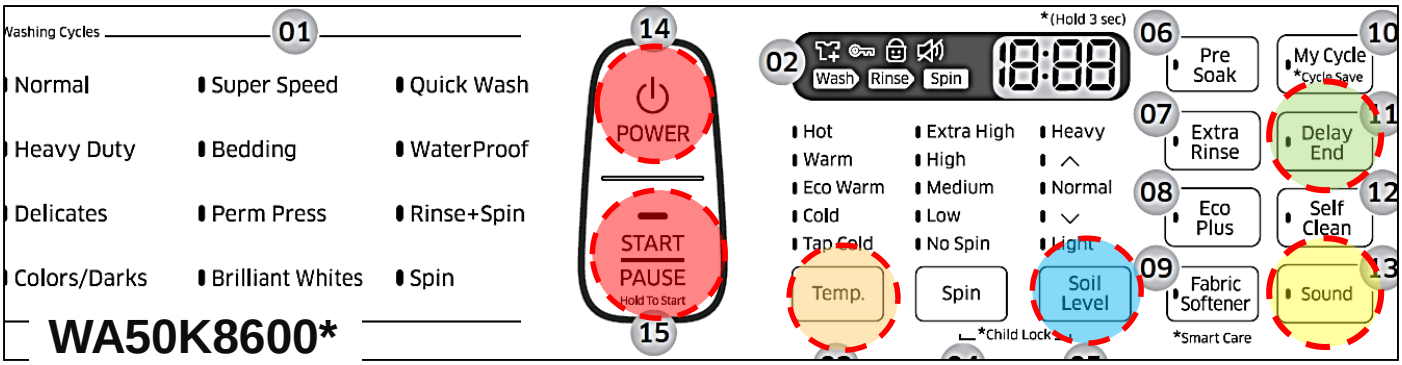
How to enter :

1. With the unit power off, hold down Extra Rinse, Temp, and Power Keys simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Display shows " 88 " at the beginning and then change to " t1 " after 3 Seconds.
   - If there is a PCB software version error, "EEEE" will be displayed.
4. Press Start Button to start the test operation, press Extra Rinse to advance the test steps. It will advance from t1->t2->t3->t4->t5->t6->t7 by sequence.
   - When operating each mode, the door must be kept closed.
   - In case of an error, an error code will show on the display.

Once the unit is entering the Test Mode, EEProm will be reset automatically.

Mode	Note
t1	Press Start Button, unit will test the following components as following sequence. Pre-wash valve ON/OFF (0.3sec) → Cold water valve ON/OFF (0.3sec) → Hot water valve ON/OFF (0.3sec) → Rinse water valve ON/OFF (0.3sec) → Drain pump motor ON/OFF (0.3sec) → Motor left turn ON/OFF(0.5 sec) → Motor right turn ON/OFF (0.3sec) •Function continues repeat if no other key been pressed.
t2	There is no heater for most of the units. Press the Start Button, unit displays " 0 " but there is no test performed. Press Extra Rinse to skip / advance the test mode.
t3	Press the Start Button, unit displays " Ut " and drains the water out first. After draining out water, unit will perform a 3 stages spin test. Start with the 2 directions tumbling and then forward to low speed spin on the first and second stages, unit will reach the highest spin speed on last spin test stage and finish the spin test.
t4	Press the Start Button, unit fills with both cold and hot water (Cold water valve on first and then hot water valve on) till the water level reaches the wash water level and then start the wash cycle. If there is no water level change within a certain time period, Water Supply Error "E1" will show on the display.
t5	t5 is same as t4, Press Extra Rinse to skip / advance the test mode.
t6	Press the Start Button, unit drains the water out. If there is no water level change within a certain time period, Drain Error "E2" will show on the display.
t7	Press the Start Button, unit fills with both cold and hot water (Cold water valve on first and then hot water valve on) till the water level reaches the rinse water level and then start the rinse cycle. If there is no water level change within a certain time period , Water Supply Error "E1" will show on the display.

Test Modes for WA45K71/7600*, WA50K8600*, WA54M8750*



How to enter the Test Mode (Smart Install Program):

1. Turn on the unit.
2. Press **Delay End** Key until **17:00** is displayed.
3. Hold down the **Start/pause** button for **7** seconds or until **AS** appears with beeping sound

After "**AS**" is displayed, press the "**Delay End**" Key to start the test. Each time the "**Delay End**" Key is pressed, it advance to next test step in sequence order.

Sub Mode	Description
1	Door lock test
2	Drain pump operation test
3	Prewash valve operation test
Co	Cold water valve operation test
Ho	Hot water valve operation test
6	Heater operation test
	Rinse operation test
7	Drain pump operation test (Duplicated)
8	Spin operation test The actual spin speed will be showing on the display by RPM.

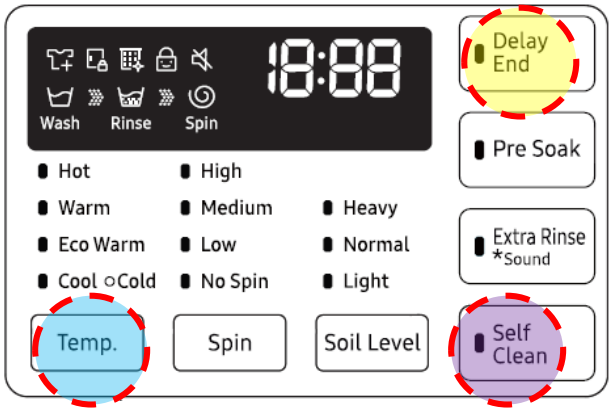
Diagnostic Code Check Mode:

After "AS" is displayed:

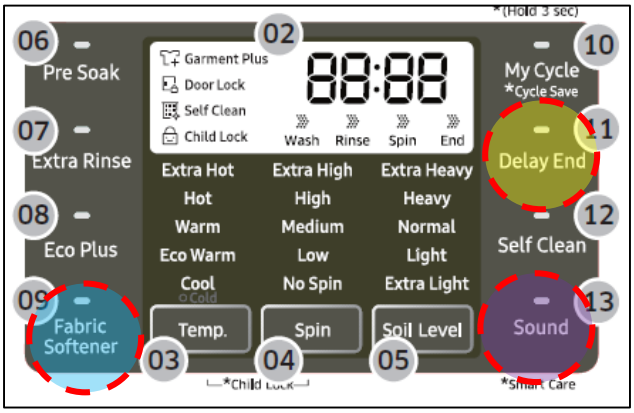
- Press the "**Temp**" Key to check the PCB software version.
- Press the "**Sound**" Key, "Cr" is displayed, (WA50K8600*)
- Press the "**Self Clean**" Key, "Cr" is displayed, (WA45K71/7600*)
- Press the "**Smart Control**" Key, "Cr" is displayed. (WA54M8750*)
- Press **Soil Level** 1 time, 0001 will display and change to display error code after 2 seconds.
- Keep on press **Soil Level** to advance and see more stored codes, max 7 Error Codes.
- If no error, "**----**" will display.

Test Modes for WA50M7050/7450*, WA52M7750/8750*

WA50M7050/7450*



WA52M7750/8750*



How to enter the Test Mode (Smart Install Program):

1. **Power** on the unit.
2. Press **Delay End** Key until **17:00** is displayed.
3. Hold down the **start/pause** button for **7** seconds or until **AS** appears with beeping sound.

After "**AS**" is displayed, press the "**Delay End**" Key to start the test. Each time the "**Delay End**" Key is pressed, it advance to next test step in sequence order.

Sub Mode	Description
1	Door lock test
2	Drain pump operation test
3	Prewash valve operation test
Co	Cold water valve operation test
Ho	Hot water valve operation test
6	Heater operation test
	Rinse operation test
7	Drain pump operation test (Duplicated)
8	Spin operation test The actual spin speed will be showing on the display by RPM.

Diagnostic Code Check Mode:

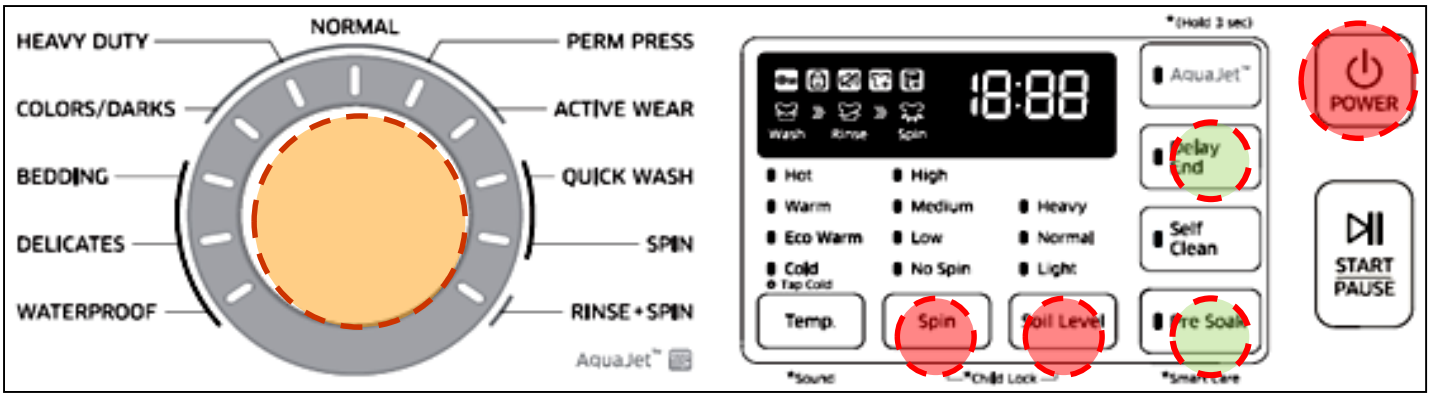
After "**AS**" is displayed, for **WA52M7750/8750***:

- Press the "**Fabric Softener**" Key to check the PCB software version.
- Press the "**Sound**" Key, "**Cr**" is displayed, turn the jog dial clockwise to see the error code(s).

After "**AS**" is displayed, for **WA50M7050/7450*** :

- Press the "**Temp**" Key to check the PCB software version.
- Press the "**Self Clean**" Key, "**Cr**" is displayed, turn the jog dial clockwise to see error code(s).

Test Modes for WA45H7**, WA48J7**, WA52J87**



Quick Test Mode

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components.

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second.
   - If there is a PCB software version error, "EEEE" will be displayed.

Unit is now under the Quick Test Mode.

CAUTION : Quick Test will reset EEProm automatically.

1-1. Component Test

Under the Quick Test Mode

1. Turn the Jog-Dial count clockwise once to remove the software version display.
2. Press the Delay End Key to lock the door, then press the following keys to test various components.

   - Temp Key : Water Valve Test (Prewash → Bleach → main Cold → softener → hot → all valves)
   - Spin Key : Drain Pump Test
   - Delay End: Door Lock/Unlock Test

1-2. Motor / Pulsator Test

Under the Quick Test Mode
Turn the Jog-Dial count clockwise until "tSt" or "tS" is displayed
Press the Start/Pause key to test Motor / Pulsator.

- The motor will turn by two directions.

1-3. Motor spin test

Under the Quick Test Mode
Turn the Jog-Dial count clockwise until "SPn" or "SP" is displayed
Press the Start/Pause key to test spin.

- The drain pump will be turned on and the display will show the spin speed in RPM.

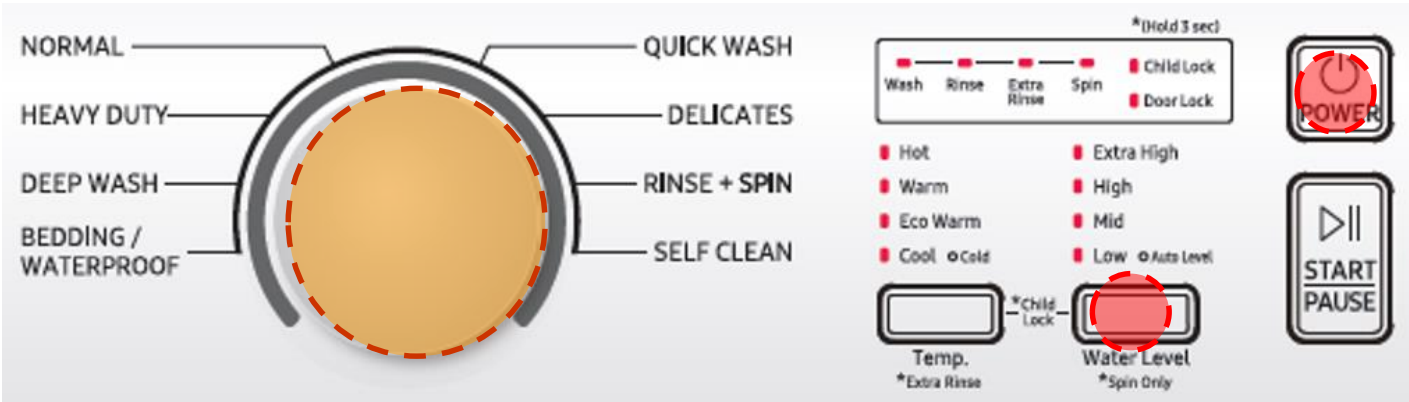
2. Diagnostic Code Check Mode

This Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure: Delay End Key and Pre Soak Key simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.

1. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
2. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
3. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
4. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WA45M3100*



Quick Test Mode

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components. Cannot access the test mode if washer is in operation.
How to enter Quick Test Mode:

1. With the unit power off, press **Water Level** Key and **Power** Key simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second.

Unit is now under the Quick Test Mode.

CAUTION : Quick Test will reset EEProm automatically.

1-1. Component Test

Under the Quick Test Mode

1. Turn the Jog-Dial to select "**Heavy Duty**" cycle.
2. Press the following keys to test various components.

- **Temp** Key : Water Valve Test (Cold → hot)
- **Water Level** Key + **Start/Pause** Key : Drain Pump Test
- **Temp** Key + **Start/Pause** Key: Door Lock/Unlock Test

1-2. Motor / Pulsator Test

Under the Quick Test Mode
Turn the Jog-Dial to select the "**Deep Wash**" cycle.
Press the Start/Pause key to test Motor / Pulsator.

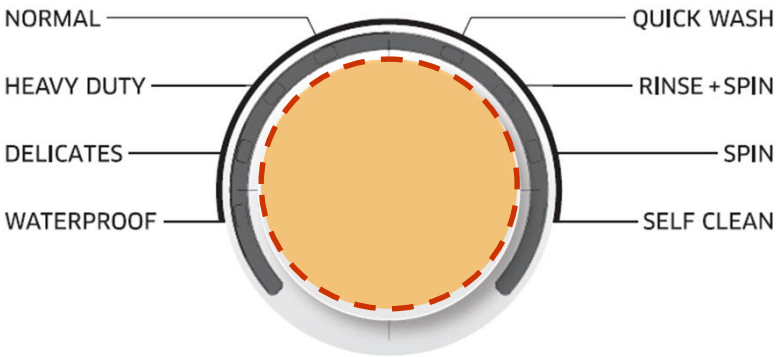
- The motor will turn by two directions.

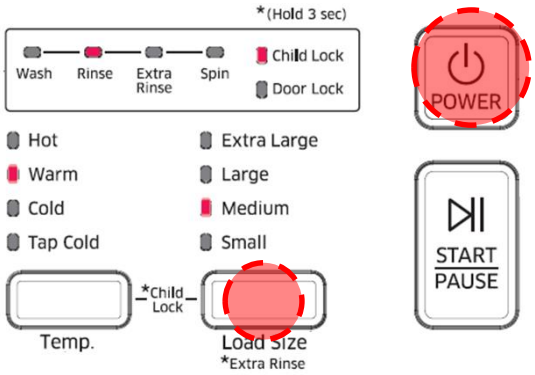
1-3. Motor spin test

Under the Quick Test Mode
Turn the Jog-Dial to select the "**Beding/Waterproof**" cycle.
Press the Start/Pause key to test spin.

- The drain pump will be turned on during the spin test.

Test Modes for WA40J3000





Quick Test Mode

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components. Cannot access the test mode if washer is in operation.
How to enter Quick Test Mode:
1. With the unit power off, press Load Size Key and Power Key simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second.

Unit is now under the Quick Test Mode.

CAUTION : Quick Test will reset EEProm automatically.

1-1. Component Test

Under the Quick Test Mode
1. Turn the Jog-Dial to select "Heavy Duty" cycle.
2. Press the following keys to test various components.

- Temp Key : Water Valve Test (Cold → hot)
- Load Size Key + Start Key : Drain Pump Test
- Temp Key + Start Key: Door Lock/Unlock Test

1-2. Motor / Pulsator Test

Under the Quick Test Mode
Turn the Jog-Dial to select the "Delicates" cycle.
Press the Start/Pause key to test Motor / Pulsator.

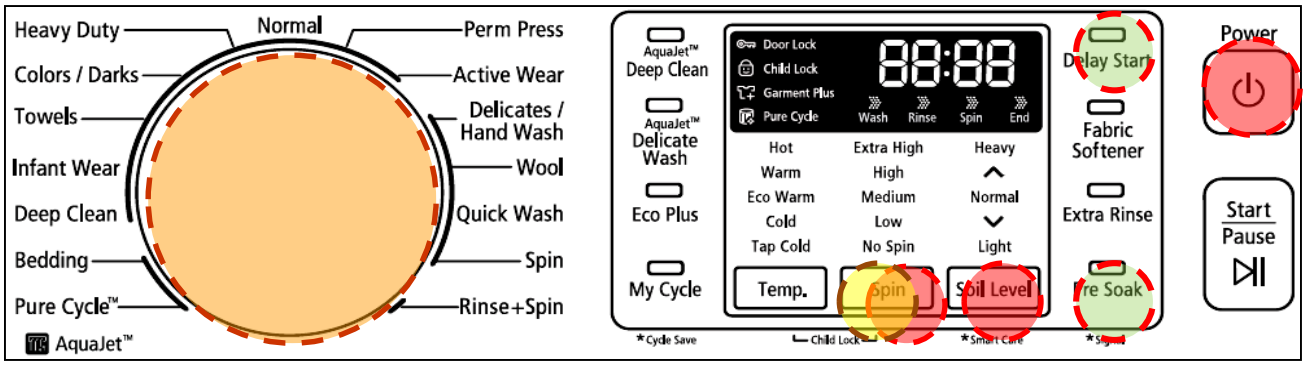
- The motor will turn by two directions.

1-3. Motor spin test

Under the Quick Test Mode
Turn the Jog-Dial to select the "Waterproof" cycle.
Press the Start/Pause key to test spin.

- The drain pump will be turned on during the spin test.

Test Modes for WA50F



1. Quick Test Mode

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components.

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WA50F is dE49)
   - If there is a PCB software version error, "EEEE" will be displayed.

Unit is now under the Quick Test Mode.

CAUTION : Quick Test will reset EEProm automatically.

1-1. Component Test

Under the Quick Test Mode

1. Turn the Jog-Dial count clockwise once to remove the software version display.
2. Press the Soil Level Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test (Prewash → Bleach → main Cold → softener → hot → Both Cold & Hot)
   - Spin Key : Drain Pump Test
   - Soil Level : Heater Test
   - My Cycle: Door Lock/Unlock Test

1-2. Motor / Pulsator Test

Under the Quick Test Mode
Turn the Jog-Dial count clockwise until "tSt" is displayed
Press the Start/Pause key to test Motor / Pulsator.

- The motor will turn by two directions.

1-3. Motor spin test

Under the Quick Test Mode
Turn the Jog-Dial count clockwise until "SPn." is displayed
Press the Start/Pause key to test spin.

- The drain pump will be turned on and the display will show the spin speed in RPM.

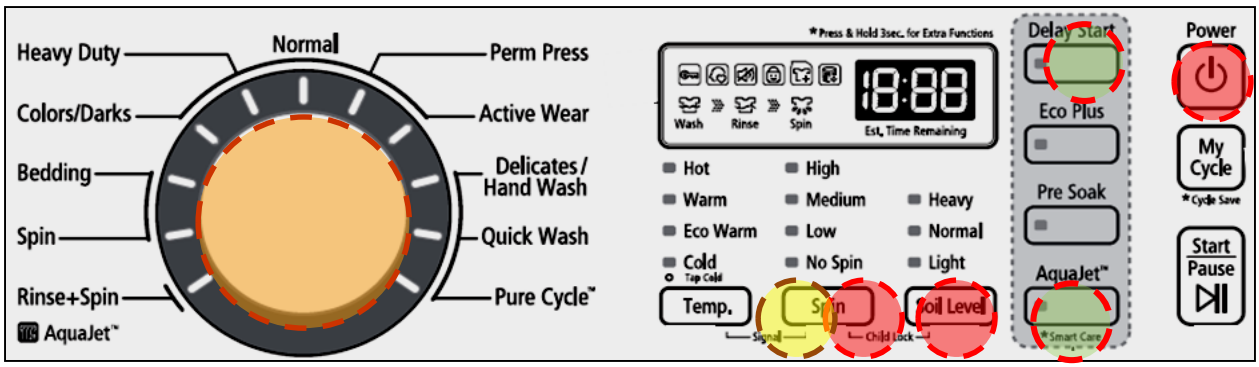
2. Diagnostic Code Check Mode

This Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure: Delay Start Key and Pre Soak Key simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.

1. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
2. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
3. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
4. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WA456, 422, 400



1. Quick Test Mode

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components.

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WA456 is U61E)
   - If there is a PCB software version error, "EEEE" will be displayed.

Unit is now under the Quick Test Mode.

CAUTION : Quick Test will reset EEProm automatically.

1-1. Component Test

Under the Quick Test Mode

1. Turn the Jog-Dial count clockwise once to remove the software version display.
2. Press the Soil Level Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test (Prewash → Bleach → main Cold → softener → hot → all valves)
   - Spin Key : Drain Pump Test
   - Soil Level : Door Lock/Unlock Test

1-2. Motor / Pulsator Test

Under the Quick Test Mode
Turn the Jog-Dial count clockwise "tSt" or "tS" is displayed
Press the Start/Pause key to test Motor / Pulsator.

- The motor will turn by two directions.

1-3. Motor spin test

Under the Quick Test Mode
Turn the Jog-Dial count clockwise until "SPn" or "SP" is displayed
Press the Start/Pause key to test spin.

- The drain pump will be turned on and the display will show the spin speed in RPM.

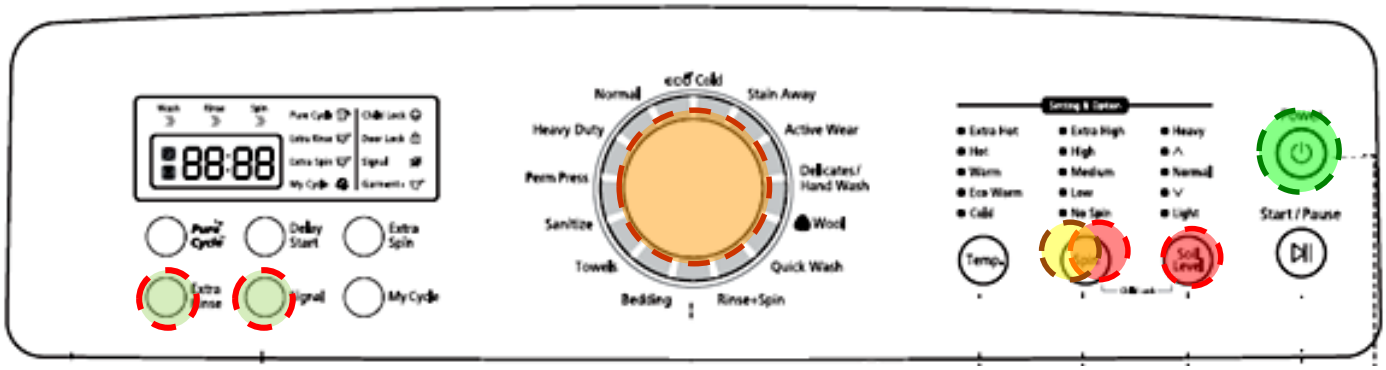
2. Diagnostic Code Check Mode

This Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Delay Start Key and Extra Rinse Key (For WA422 & WA400), Delay Start Key and AquaJetTM Key (For WA456) simultaneously for 3 seconds or until the unit displays "000" and sends out beeping sound to enter Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Test Modes for WA5451, 5471



1. Quick Test Mode

Quick Test Mode can be used to check LED display, verify PCB software version, and test most of the major components.

How to enter Quick Test Mode:

1. With the unit power off, press Spin, Soil Level, and Power simultaneously.
2. All LED's light up for around a second and sends out a beeping sound to start the test mode.
3. Displays PCB software version for a second. (e.g. The S/W Version for WA5451 is Pt35)
   - If there is a PCB software version error, "EEEE" will be displayed.

Unit is now under the Quick Test Mode.

CAUTION : Quick Test will reset EEProm automatically.

1-1. Component Test

Under the Quick Test Mode

1. Turn the Jog-Dial count clockwise once to remove the software version display.
2. Press the Signal Key to lock the door, then press the following keys to test various components.
   - Temp Key : Water Valve Test (Prewash → Bleach → main Cold → softener → hot → Both Cold & Hot)
   - Spin Key : Drain Pump Test
   - Soil Level Key : Heater Test.
   - Signal Level : Door Lock/Unlock Test

1-2. Motor / Pulsator Test

Under the Quick Test Mode

Turn the Jog-Dial count clockwise until "tSt" is displayed.

Press the Start/Pause key to test Motor / Pulsator.

- The motor will turn by two directions.

1-3. Motor spin test

Under the Quick Test Mode

Turn the Jog-Dial count clockwise until "SPn" is displayed.

Press the Start/Pause key to test spin.

- The drain pump will be turned on and the display will show the spin speed in RPM.

2. Diagnostic Code Check Mode

This Mode can be used to verify/recall the error code which was last displayed for repair reference.

Testing Procedure:

1. Turn on the unit, hold down the Signal Key and Extra Rinse Key simultaneously for 3 seconds or until the unit displays "0"on the display and sends out beeping sounds to enter the Service Test Mode.
2. Under the Service Test Mode, press the "Spin" key to start Diagnostic Code Check Mode with Code "d" flashing.
3. To cycle through the diagnostic codes (d1,d2,d3~d9), turn the Cycle Selector Knob in one direction (either Clockwise or Counterclockwise).
4. When turning the Cycle Selector Knob in one direction, it displays the error codes from the latest one (d1).
5. When turning the knob in the opposite direction, it displays the diagnostic codes in the reverse order.
   Ex) When display stops at d5 and the knob is turned backward, it displays from d4 down to "d1".

Digital Appliances Division

SAMSUNG

Sixth Edition

Dryer
Test Mode & Error Code List

DV203, 206, 210, 218, 220, 229, 306, 316, 317, 330, 331, 337, 339, 340, 350, 361, 365, 393, 395, 397, 405, 409, 410, 419, 422, 428, 431, 448, 455, 456, 457, 461, 511, 520

DVE/G60M9900_DM9900M (PJT)
DVE/G55M9600_DM9600M (PJT)
DVE/G54M8750_DV8750M (PJT)
DVE/G52M7750_DV7700M (PJT)
DVE/G50M7450_DV7400M (PJT)
DVE/G45M5500_DV5500M (PJT)
DV50K7500, 8600
DV45K6200, 6500, 7600
DV22K6800
DV52J8060, 8700
DV48J7700, 7770
DV40J3000
DV42H5000, 5200, 5400, 5600
DV45H6300, 7000, 7200, 7400
DV56H9000, 9100

DV50F9A

DV5451, 5471

DV4006, 4015, 665

Refer to the STG & service manual on the GSPN for more information

Created By: Guanniu (Victor) Han

Dryer Test Mode & Error Code list

Index

Error Codes

Error code list for standard size dryers …… **51**
Error Code List for Flex dryer DVE/G60M9900*..... **52**
Error message/code list for DV40J3000 ..... **53**
Error code/message for LCD display models …… **54**
Error Code list for DV4006/4015, DV665 ..... **54**

Test Modes

Data Display Mode for Flex Dryers …… **55**
Smart Install / Sensor Bar Test / Error Recall Mode for DVE/G60M9900* & DVE/G55M9600* Flex Dryers..... **56**
Smart Install Mode / Sensor Bar Test Mode ……..... **57**
Error Code Recall Mode…….. **58**
Data Display Mode …… **59**
Test Mode & Error Check for DV457 ……..... **60 ~ 61**
Sensor Bar Test Mode……..**62**
Universal Parameter for standard size dryer……... **63**

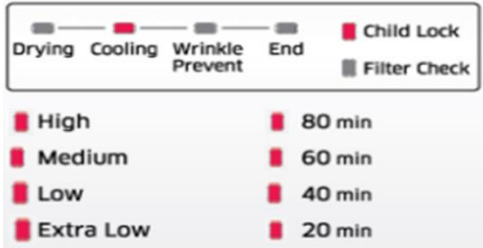
Error Code List for all standard size dryers:

Code	Meaning	Failure Components
tE / tC / tC2	Thermistor Error	Temperature sensor (Thermistor) resistance is abnormal, either too low or too high. (10KΩ @ room temp)
tS	Thermistor short	Temperature sensor (Thermistor) resistance is too low or it's short circuit. (10KΩ @ room temp)
tO	Thermistor open	Temperature sensor (Thermistor) resistance is too high or it's open circuit. (10KΩ @ room temp)
dO / dE / dC	Door open	Door is open. - Close the door and restart.
dF	Door Circuit Failure	Door switch defective. Door switch wire terminals are loose/open or PCB defect.
hE / hC	Over Heat Error	Invalid heating temperature. Restricted vent or abnormal thermistor resistance.
bE / bE2 / bC2	Button Error	Button(s) been held down longer than 75 Seconds Button(s) jammed
od	Excessively Dry	Drying time is more than 240 min. Moisture Sensor Bars defective, or PCB defect.
Et / EEE	EEprom Fail	Invalid EEprom communication, PCB defective.
tE3 / tE5 / tC5	Ventilation Error Vent sensor Error	Clogged Lint Screen or vent is restricted Abnormal Thermistor resistance. (For the models with vent sensor / 2nd Thermistor)
2E / 9E1 / 9C1	Abnormal Voltage Error	Power supply voltage is either too high or too low. PCB defective.
FE / FC	Power Frequency Error	Abnormal Power Frequency.
AE / AC	Communication Error	Electronic control problem - PCB main or wire harness defective
AE3	Communication Error	Communication Error between DR Modem and PCB main - PCB main or DR Modem defective
AE4	Communication Error	Communication Error between WIFI PCB and PCB main - PCB main or WIFI PCB defective
AE5	Communication Error	Communication Error between LCD display & PCB main - PCB main or LCD PCB defective

Error Code List for Flex dryer
DVE/G60M9900* & DVE/G55M9600*

Code		Trigger	Action Taken / Checking points
Delicate Dryer	Tumble Dryer		
1 tC	**-**	Top thermister (Delicate Dryer) resistance is very low or high.	- Check the restricted vent system. - Check Thermister resistance.
1 tC5	**-**	Bottom thermister (Delicate Dryer) resistance is very low or high.	- Check the restricted vent system. - Check Thermister resistance.
-	**tC**	The Thermister (Tumble Dryer) resistance is very low or high.	- Clogged lint screen, check the vent system. - Check Thermister resistance.
1 HC	**HC**	Invalid heating Temp in running the dryer	Restricted vent system. - Check Thermister resistance.
1 dC	**dC**	Running the dryer with door open	Close the door, and run the dryer. - Loose or open wire terminals in Door Sense circuit.
-	**dF**	Invalid door state for more than 256 milliseconds	-Loose or open wire terminals in door Sense circuit.
1bC2	**bC2**	Invalid state of key circuit short for 30 seconds.	- Display PCB key circuit short or not.
1 FC	**FC**	Invalid power source Frequency	-Not using regular power source frequency - Invalid power frequency sense circuit
1 AC7	**AC**	Communication Error between SUB PBA <-> MAIN PBA for tumble dryer	- Check PCB and Wire harness.- Replace PCB.
1 AC7		Communication Error between SUB PBA <-> MAIN PBA for Delicate dryer	- Check PCB and Wire harness.- Replace PCB.
-	**9C1**	Invalid power source voltage	-Not using regular power source voltage -Invalid power frequency sense circuit
-	**HC2**	Gas ignition failed.	Make sure the gas valve is unlocked. Make sure the filter is unclogged. Make sure the plumbing is not disconnected nor clogged.

Error message list for DV40J3000



If an error occurs, all 8 LEDs turn ON first and then the corresponding LED will be blinking.

Code	Equivalent Code & Meaning	Failure Components
Extra Low Temp LED blinking	Extra Low **tC2** Thermistor Error	Temperature sensor (Thermistor) resistance is abnormal, either too low or too high. (10KΩ @ room temp)
High Temp LED blinking	High **dC** Door open	Door is open. - Close the door and restart.
40 min Dry Time LED blinking	40 min **dF** Door Circuit Failure	Door switch defective. Door switch wire terminals are loose/open or PCB defect.
60 min Dry Time LED blinking	60 min **hC** Over Heat Error	Invalid heating temperature. Restricted vent or abnormal thermistor resistance.
Low Temp LED blinking	Low **bC2** Button Error	Button(s) been held down longer than 75 Seconds Button(s) jammed
80 min Dry Time LED blinking	80 min **9C1** Abnormal Voltage Error	Power supply voltage is either too high or too low. PCB defective.
Medium Temp LED blinking	Medium **AC** Communication Error	Electronic control problem - PCB main or wire harness defective
Extra Low Temp + 20 min Dry Time LED blinking	Extra Low + 20 min **FC** Power Frequency Error	Abnormal Power Frequency.

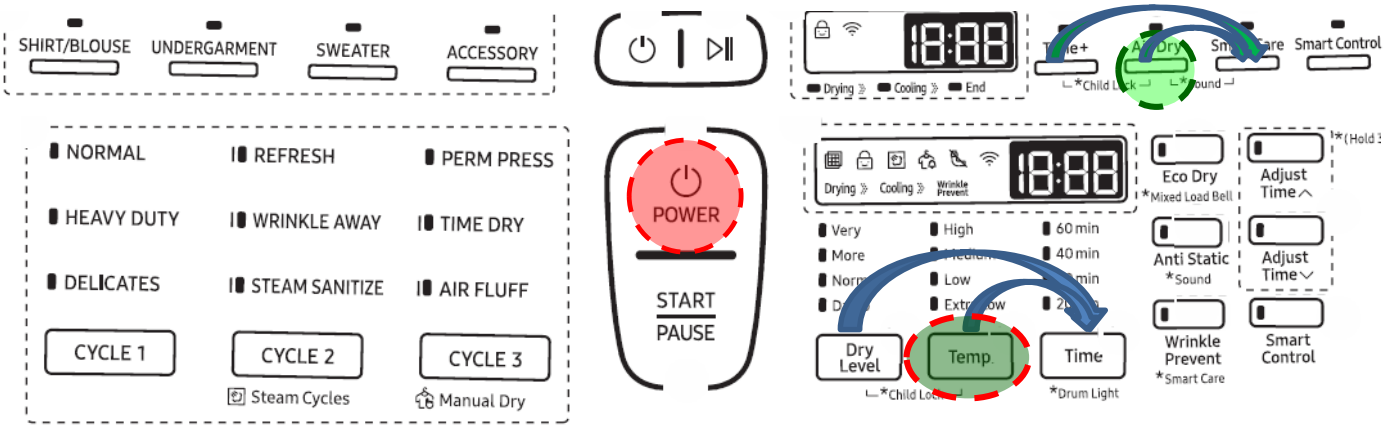
Error message list for LCD screen display models DV428, 448, 520

Code	Error Message	Failure Components
tS/tO	Error! Temperature Sensor Problem	Thermistor Error. Very low/high resistance. (10KΩ @ room temperature)
do	Error! Door is open.	Door is open. - Close the door and restart.
dF	Error! Door Open Sensing Problem	Door switch defect, door switch wire terminals are loose/open, or PCB defective.
hE	Error! Overheated	Invalid heating temperature. Restricted vent system, or abnormal thermistor resistance. (10KΩ @ room temp)
bE	Error! A Button is either stuck or is being pressed continuouly.	Button(s) been held down longer than 75 Seconds, or button(s) jammed.
od	Error! Time Limit Exceeded	Drying time is more than 240 min Moisture Sensor Bars defective, or PCB defective.
Et	Error! Electronic Control Problem	Invalid EEprom communication, PCB defective.
FE	Error! Power Interruption	Abnormal Power Frequency.

Error Code List for small dryer DV4006/4105/665

Code	Meaning	Failure Components
E1	Thermistor Short	Thermistor resistance is very low. (50KΩ @ 20°C)
E5	Thermistor Open	Thermistor resistance is very high or it's open circuit. (50KΩ @ 20°C)
E3	Motor Error	Defective motor, belt broken, loose wire connectors, or defective PCB
EH	Heating Error.	Open heater loop, restricted ventilation, defective thermistor, or defective power relay on PCB

Data Display Mode for Flex Dryers DVE/G60M9900* & DVE/G55M9600*



Data Display Mode can be used to verify the dryer data such as PCB version, temperature etc.

How to enter :

For Lower Tumble Dryer, turning on the dryer, press **Dry Level** → **Time** → **Temp** → **Time** by sequence within 2 seconds to enter the mode.

For upper Delicate dryer, turning on the dryer, press:

Time+ ➞ SuperSpeed ➞ AirDry ➞ SuperSpeed for DVE/G60M9900*

Time+ ➞ SmartCare ➞ AirDry ➞ SmartCare for DVE/G55M9600*

To exit the Data Display Mode , turn off the dryer.

Data Display Mode will be activated with a “Ding-Dong” sound, the display should show “0000”.

To check the data by the following two ways:

Press the **Air Dry** Key to advance the data display mode for upper Delicate dryer.

Press the **Temp** Key to advance the data display mode for Lower Tumble Dryer.

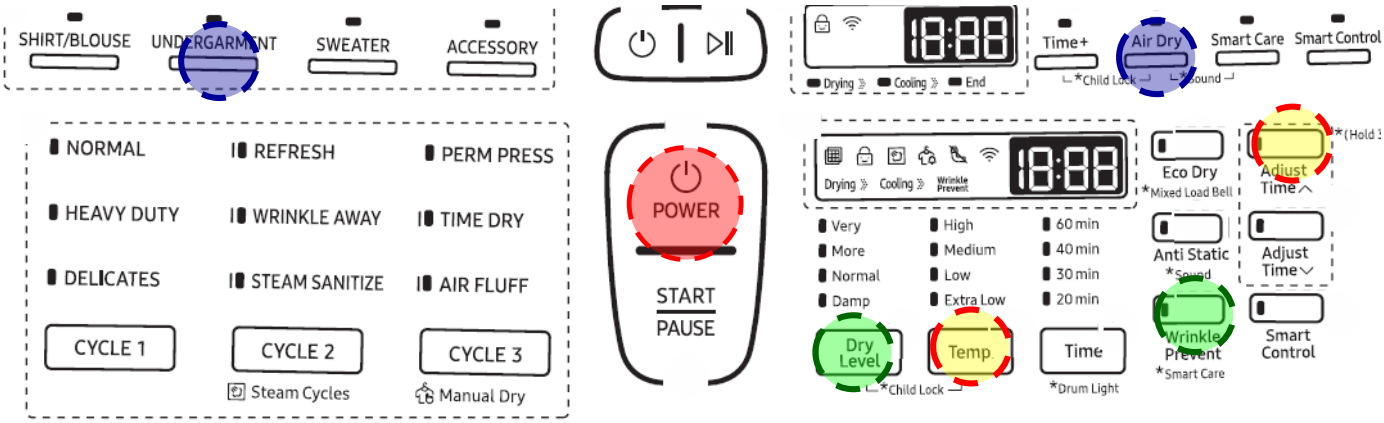
The display will be changed by one increment such as 0000, 0001, 0002 etc and then display the data.

Data Display Sequence:

- Display Mode 1 : Main micom version
- Display Mode 2 : display micom version
- Display Mode 3 : touch module version
- Display Mode 4 : option value
- Display Mode 5 : **Temperature (Celsius).**
- Display Mode 6 : Average temperature data for 1 minute
- Display Mode 7 : Temperature data for detecting vent clog up
- Display Mode 8 : Average touch sensor data for 1 minute
- Display Mode 9 : cycle count

Smart Install / Sensor Bar Test / Error Recall Mode for DVE/G60M9900* & DVE/G55M9600* Flex Dryers

Service Mode / Sensor Bar Data Mode



Smart Install Mode allows tech to check if the dryer is installed properly. Sensor Bar Test can check the moisture sensor bars and the related circuit.

To enter Smart Install Mode:
Turn on the dryer, hold down the **Adjust Time ^ Key + Temp Key** simultaneously for 7 seconds or until the unit displays "**AS**" or "**SC**" to enter the mode.

To test the sensors bars, simply open the door, touch the sensor bars by hand, the state of the sensor will appear .

- **0 :** when the sensor bars are not been touched by hand / wet stuff.
- **1 :** when the sensor bars have been touched by hand / wet stuff.

To test the motor and heater, Press the Start button, the diagnosis result appears.
-OK : Both motor and heater work normally
-HC : Motor or heater doesn't work normally

To exit the Smart Install mode, turn off the dryer.

Error Code / Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

How to enter :

Turn on the dryer, hold down the following buttons simultaneously for 8 seconds to enter the mode.

Wrinkle prevent Key + Dry Level Key for lower tumble dryer
Under Garment Key + Air Dy for upper Delicate Dryer

The last error code that was detected appears.
If no error code has been found, nothing is displayed.

To exit the Error Code / Diagnostic Code Check Mode, hold down the same buttons simultaneously for 7 seconds again.

Smart Install Mode / Sensor Bar Test Mode

Smart Install Mode allows tech to check if the dryer is installed properly. Sensor Bar Test can check the moisture sensor bars and the related circuit.

To enter Smart Install Mode:
Turn on the dryer, hold down the following keys simultaneously for 7 seconds or until the unit displays “AS” or “SC” to enter the mode.
Bedding Key + Mixed Load Bell Key for DVE(G)54M87*
Air Fluff Key + Mixed Load Bell Key for DV50K8600*
Cycle 1 Key + Mixed Load Bell Key for: DVE(G)52M8650*
Adjust Time Key + Temp Key for DV22K**
Adjust Time ^ Key + Temp Key for:
DV52J*, DV48J*, DV45K65*, DV45K62*, DV45K76*, DV50K75*, DVE(G)45M55*, DVE(G)50M7450, DVE(G)52M775*
To test the sensors bars, simply open the door, touch the sensor bars by hand, the state of the sensor will appear .

- **0 :** when the sensor bars are not been touched by hand / wet stuff.
- **1 :** when the sensor bars have been touched by hand / wet stuff.

To test the motor and heater, Press the Start button, the diagnosis result appears.
-OK : Both motor and heater work normally
-HC : Motor or heater doesn’t work normally

To exit the Smart Install mode, turn off the dryer.

Error Code / Diagnostic Code Check Mode

Error Code / Diagnostic Code Check Mode can be used to verify/recall the error code which was last displayed for repair reference.

How to enter :

Turn on the dryer, hold down the following buttons simultaneously for 7 seconds to enter the mode.

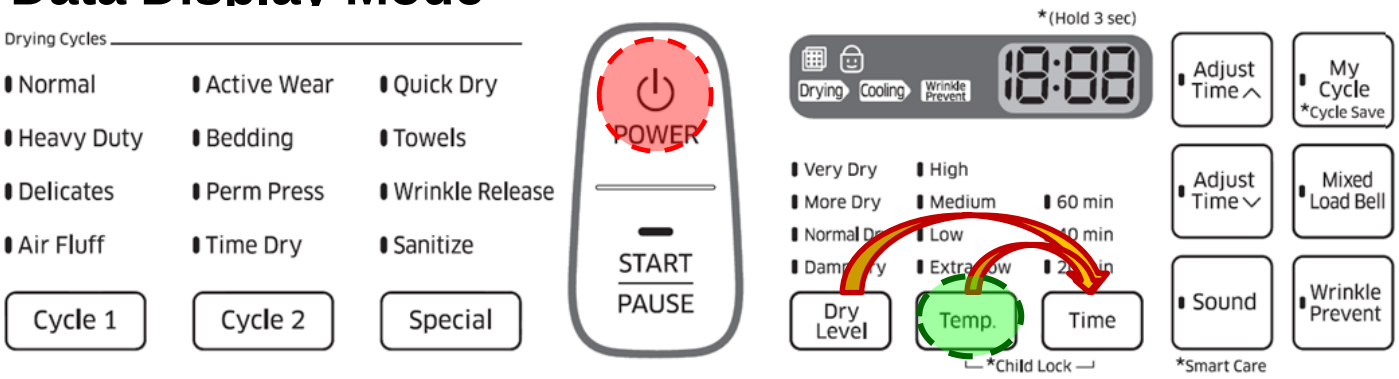
Wrinkle prevent Key + Dry Level Key for:

- **DV22K*, DV52J*, DV45H*, DV42H*, DV56H9*, DV48J, DV45K65*, DV45K62* DV50K75*, DVE(G)52M77*, DVE(G)50M7450, DVE(G)45M55**
- **Bedding + Adjust Time ▼ for DVE(G)54M8750***
- **Air Fluff Key + Adjust Time v Key for DV50K8600***
- **Cycle 1 Key + Adjust Time v Key for: DV45K76*, DVE(G)52M86***
- **TEMP Key for DV40J3000**

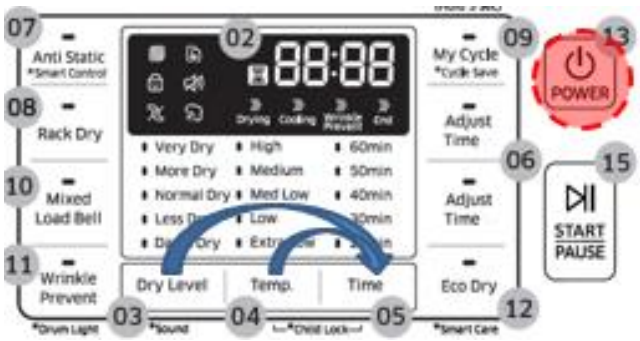
The last error code that was detected appears.
If no error code has been found, nothing is displayed.

To exit the Error Code / Diagnostic Code Check Mode, hold down the same buttons simultaneously for 7 seconds again.

Data Display Mode



Data Display Mode can be used to verify the dryer data such as PCB version, temperature etc.



How to enter :

Turning on the dryer, press **Dry Level** → **Time** → **Temp** → **Time** by sequence within 2 seconds to enter the mode.

Applied models:

DV22K*, DV52J*, DV48J*, DV45K65*, DV45K62*, DV50K75*, DV50K8600*, DV45K76*, DVE/G45M5500, DVE/G60M9900, DVE/G55M9600*, DVE/G54M8750*, DVE/G52M8650*, DVE/G52M7750*, DVE/G50M7450*

To exit the Data Display Mode , turn off the dryer.

Data Display Mode will be activated with a “Ding-Dong” sound, the display should show “0000”.

To check the data by the following two ways:

Turn the cycle selector knob clockwise to advance the data display mode.

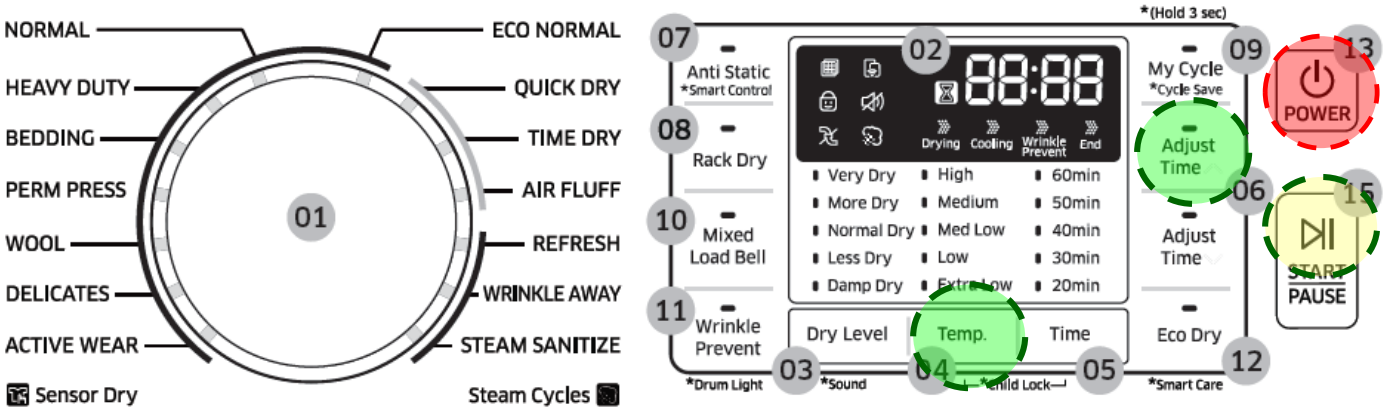
Press the **Temp** Key to advance the data display mode.

The display will be changed by one increment such as 0000, 0001, 0002 etc and then display the data.

Data Display Sequence:

- Display Mode 1 : Main micom version
- Display Mode 2 : display micom version
- Display Mode 3 : touch module version
- Display Mode 4 : option value
- Display Mode 5 : **Temperature (Celsius).**
- Display Mode 6 : Average temperature data for 1 minute
- Display Mode 7 : Temperature data for detecting vent clog up
- Display Mode 8 : Average touch sensor data for 1 minute
- Display Mode 9 : cycle count

Service Test Mode for:
DV42H5*, DV45H6*, DV56H9*



Service Test Mode / Sensor Bar Test Mode

Smart Install Mode allows tech to check if the dryer is installed properly.
Sensor Bar Test can check the moisture sensor bars and the related circuit.

To enter the Service Test Mode / Sensor Bar Test Mode:
Turn on the dryer, hold down **Mixed Load Bell + Temp Keys** simultaneously for 3 seconds.

1.) To test the sensors bars, simply open the door, touch the sensor bars by hand, the state of the sensor will appear .

- **0 :** when the sensor bars are not been touched by hand / wet stuff.
- **1 :** when the sensor bars have been touched by hand / wet stuff.

2.) To test the motor and heater, Press the Start button, the diagnosis result appears.

-OK : Both motor and heater work normally
-HC : Motor or heater doesn't work normally

3.) To check the PCB software version, press the Temp key.

To exit the Smart Install mode, turn off the dryer.

Data Display Mode

Data Display Mode can be used to verify the dryer data such as PCB version, temperature etc.

How to enter :

Press **Adjust Up Key + Adjust Down Key** simultaneously for 7 seconds to enter the mode or until the display shows "0000" with a "Ding-Dong" sound.

Press the **Temp** Key to advance the data display mode and see more data.

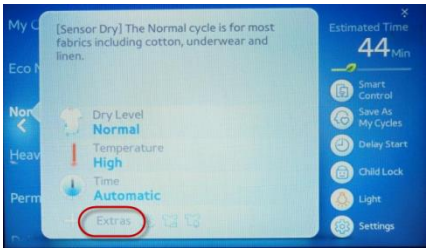
Data Display Sequence:

- Display Mode 0 : **Temperature (Celsius).**
- Display Mode 1 : Average temperature data for 1 minute
- Display Mode 2 : Average touch sensor data for 1 minute

Test Mode & Error Check for DV457 with WIFI

Service Test Mode:

Service Test Mode can be used to verify many technical data of the dryer such as sensor bar, temperature, PCB software etc.



How to Enter:

Service Test Mode can be entered by two ways.

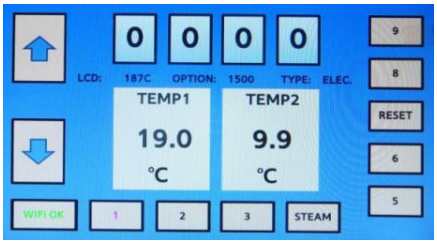
Method 1: Dryer status--with initial power on.

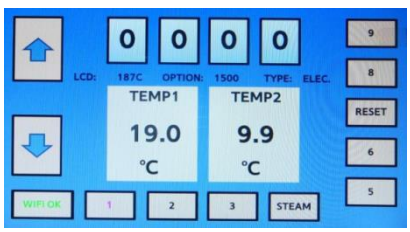
Method 2: Dryer status--with the dryer running.

✻ For the sensor bar test, recommend to use the Method 2.

Method 1: Dryer status--with initial power on.

1. Touch the “Sensor Dry” message on top of the cycle selection window to enter the Sensor Dry Mode.
2. Hold down Extras message at the bottom of the sensor dry mode for 3 Seconds to enter the Service Test Mode.



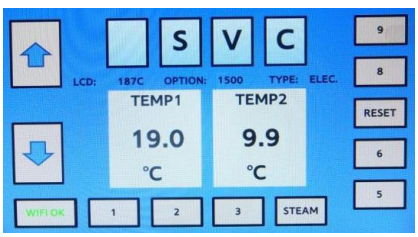


Method 2 : Dryer status--with the dryer running.

Tap "A" and "B" area as sequence of below on the display screen to enter the Service Test Mode.

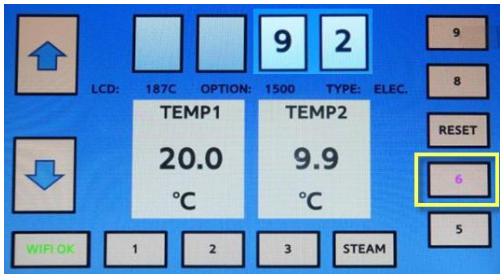
1. Tap "A" (top right corner) three times
2. Tap "B" (top left corner) twice
3. Tap "A"(top right corner) once

- After entering Service Mode, WiFi test will be performed automatically. If there is an “AE3” or “AE4” error code showing on the display, check WiFi module in LCD Module.
- Touch the number Icon or the Arrow Icon on the service test mode window to start the desired test.
- Before entering Service Mode, turn on AP. (WiFi AP)
- Press the Start button after the AE3 or AE4 error occurs to cancel the error notification and continue Service mode.



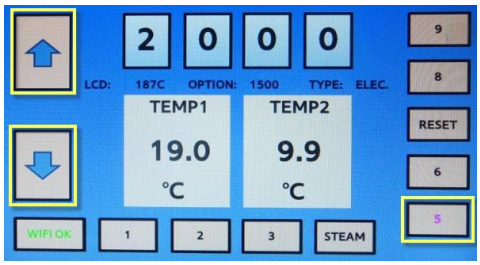
Test Mode & Error Check for DV457 with WIFI

■ Touch Sensor Data Display Mode



Enter the service test mode by Method 2 while dryer is running, press “6” to enter the Touch Sensor Data Display Mode.

- Once the wet items touched the sensor bar, the bar pulse data will add up on the screen.
- If the dryer is empty, simply open the door but keep the door switch closed manually before entering the test mode, touch the sensor bar by hand, data will add up on screen

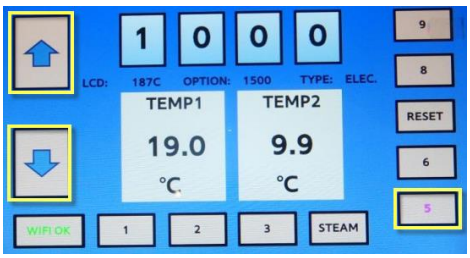


■ Data Display Mode

Check the temperature and sensor bar data

Press the “5” Icon in service mode to enter the Data Display Mode.

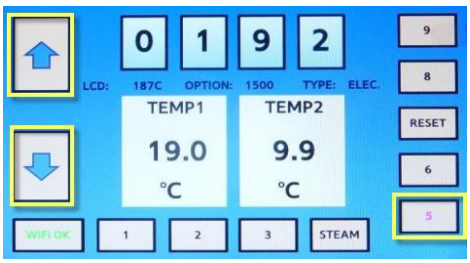
Press the up arrow / down arrow Icons to check the data.

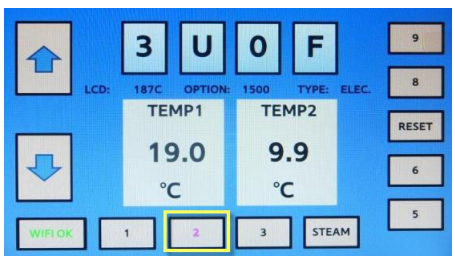


Display Mode 0 : Temperature data

Display Mode 1 : Average Temperature data for 1 minute

Display Mode 2 : Average Touch Sensor data for 1 minute





■ PCB Software Version Verify

Check the PCB Software Version .

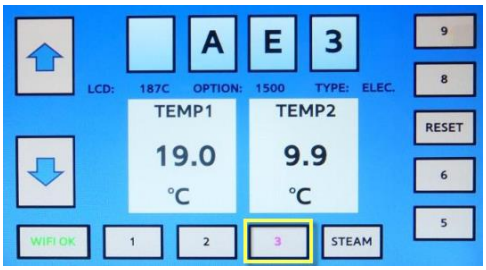
Press “2” in service mode to verify the PCB Software Version.

■ DR modem connection test

Check if the parts from the Main PCB to the DR modem are properly communicated.

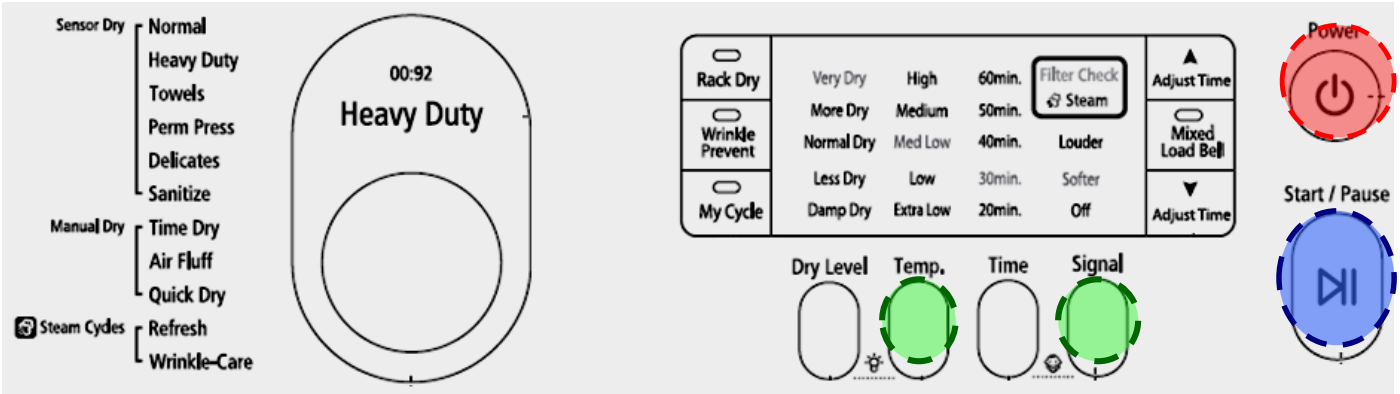
Press “3” in service mode to enter the DR test mode..

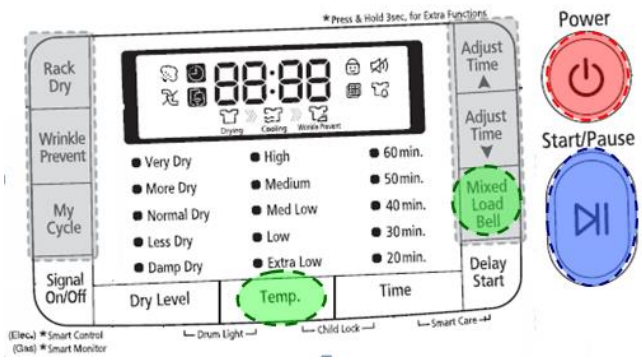
If the DR wire test is passed, “SG” will show on the display, otherwise, “AE3” error occurs.

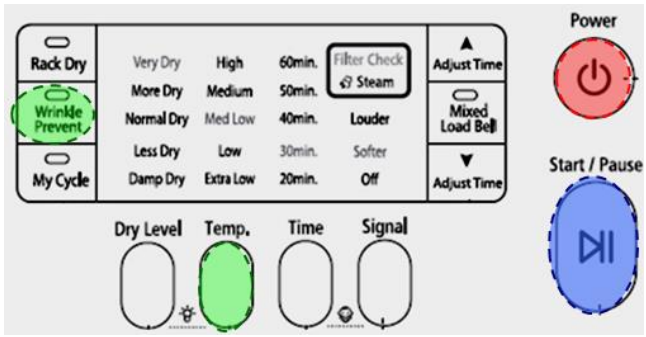


Sensor Bar Test Mode Part 1

Sensor Bar Test can check the moisture sensor bars and the related circuit.







How to Enter:

1. Turn on the dryer, set unit to normal sensing dry and start.
2. Hold down the following keys simultaneously for 3 seconds, or until it sends out a beeping sound and there should be a “0” displayed.

Temp Key + Signal Key for: DV203, 206, 218, 229, 306, 316, 317, 337, DV339, 409, 419, 428, 438, 448

Wrinkle Prevent + Temp Keys for: DV453, 455, DV456, 422, DV5451, 5471, DV50F9A, DV365

Mixed Load Bell + Temp Keys for: DV520, 511, DV210/220, DV361, DV405 DV393/395

3. Once the wet items touched the sensor bar, data will add up.
4. To test the unit while empty, simply open the door but keep the door switch closed manually. Repeat the above procedures, touch the sensor bar by hand, data will add up.

Universal Parameter for standard size dryer

Part	CODE	SPEC	
MOTOR	N/A	120V, 60Hz	Main : 3.35 Ω Sub : 3.05 Ω
Sensor Bars	N/A	dry load wet load	Infinity 190 Ω ± 10%
DOOR SWITCH	DC64-00828B	AC125V/250V,7.5/5A	
Drum Roller	DC97-16782A	--	
Electric dryer			
HEATER	N/A	240V 5300W Single coil	9.2~9.6 Ω
HEATER	N/A	240V 5200W (3700+1500W) Dual Coils	12.3~13.7 Ω 32.2~35.7 Ω
THERMOSTAT	DC47-00018A	Hi Limit 260°F/127°C, 25A	
THERMOSTAT	DC96-00887A DC47-00015A	Thermostat Cut Off 320°F/160°C, 25A	
THERMOSTAT	DC47-00016A	Thermostat Cut Off 185°F/85°C, 25A	
THERMISTOR	DC32-00007A	40~105℃ 10 KΩ @ 25 °C (77 °F)	
THERMISTOR	DC93-00329A	125V 13A 238.23 kΩ @ 25 °C (77 °F)	
Gas Dryer			
THERMOSTAT	DC47-00017A	120V25A 230℃ open 180 close	
HEATER-IGNITER	DC47-00022A	120V, 40 ~ 400Ω	
SENSOR-RADIANT	DC32-00008A	120V 5.75A 10RS, 12~20s open, 26~40s close	
Gas Valve	DC62-00201A	120V 60HZ terminals #1 and #3 (Booster Coil) 560 Ω. terminals #1 and #2 (Holding Coil) 1365 Ω . terminals #4 and #5 (Secondary Coil) 1325 Ω . terminals #6 and #7(2-stage Coil) 1000Ω	

Digital Appliances Division

SAMSUNG

Sixth Edition

RANGE / COOKTOP / WALL OVEN
TEST MODE & ERROR CODE LIST

Refer to the STG & service manual on the GSPN for more information

Created By: Guanniu (Victor) Han

Applied Models

Ranges

Regular radiant cooktop ranges:

NE58M9430
NE59M4320 / 6850 / 7630
NE58K9430 / 9500 / 9850
NE59K3310 / 3321 / 6851
NE59J3420 / 3421 / 7630 / 7651 / 7750 / 7850
NE58H9950
NE58F9500 / 9710
NE595R0 / 595R1 / 597R0
FE-R300 / 400 / 500 / 700
FE710DRS
FCQ321, FTQ352 / 386

Induction cooktop ranges:

NE58M9430
NE58K9560
NE58H9970
NE595N0 / 597N0 / 599N1
FTQ307

Gas ranges:

NX58M3310 / 6630 / 6650 / 9960
NX58K3310 / 7850 / 9500 / 9850
NX58J7750
NX58H5600 / 5650 / 9500 / 9950
NX58F5700
NX583G0VB
FX510 / 710

Hybrid ranges:

FE-N300 / 500
NY58J9850

Applied Models

Cooktops

Regular radiant cooktop:
NZ36K6430* / 6432*
NZ30K6330* / 6332*

Induction cooktop:
NZ36M9880*
NZ30M9880*
NZ36K7880* / 7882*
NZ30K7880* / 7882*

Gas cooktop:
NA36M9750*
NA36K6550* / 6552* / 7750* / 7552*
NA30K6550* / 6552* / 7750*

Wall Ovens:
NV51K7770S* / 7772S*
NV51K6650S* / 6652S*
NV51M9770S*

NV51K7770D* / 7772D*
NV51K6650D*
NV51M9770D*

Micro wave & oven combo:
NQ70M6650* / 7770* / 9770*

Range Hoods:
NK36M9600*
NK36K7000*
NK30M9600*
NK30K7000*

Range Test Mode & Error Code list

Index

Error Code List for Range / Ovens…….. **65 ~ 66**

Error Code List for Induction Cooktop and Induction Ranges……..…… **67 ~ 69**

Additional Error Codes for NE595/597/599, NE58F9* ……. **70**

Additional Error Codes for FE-N300/500 Hybrid Cooktop Ranges…..… **70**

Oven Error Code Recall Program…… **71 ~ 72**

Over Temperature Sensor Resistance Value Chart……..…. **73**

Oven Temperature Calibration Program……... **73 ~ 74**

Use of “Broil” + “Number” Button for: NE59M9430/7630/6850/4320*, NX58M6650/6630*, NE58K9560*, NE59J78**/77**?76**……. **75 ~ 76**

Use of “Options” Button for NE58H9970**…….. **77 ~ 78**

Use of “Options” Button for NE58F95/97**, NE58H99*, NE58K95*…... **79 ~ 80**

Use of “Options” Button for NY58J98**, NX58H99/95**, NX58K95*…... **81 ~ 82**

Use of “Options” Button for NE58K9850**……..……. **83 ~ 84**

Use of “Options” Button for NV51K6650/7770**……..…. **85 ~ 86**

Oven data checking Program for Wall Ovens…….. **87**

Induction Cooktop Test Program…… **88**

Error Code List for Ovens

CODE	CAUSE	REASON / SOLUTION
C-20	Oven sensor Err Open / Short	1. Disconnect oven sensor from control, measure the sensor resistance:1080Ω at room temperature, replace oven sensor if abnormal. 2. If the sensor resistance is normal, check the wire terminal or the wire harness. 3. Measure resistance of the oven sensor connector on oven control PCB (Normal: 2850Ω). Replace PCB main if abnormal.
E-27 **E-21**	Oven sensor opened (Over 2950Ω)	
E-28 **E-22**	Oven sensor shorted. (Under 930Ω)	
E-08	Oven heating error	Oven temperature can not reach 100˚F(38˚C) within 10 minutes after the oven starts. Check oven sensor, wire connectors, and PCB relays.
C-21 **E-0A** **E-24**	Oven overheating error	Oven temperature is higher than 650˚F(343˚c) while oven is working. (Excluding the case of self-cleaning) Check oven sensor, wire connectors, and PCB relays.
E-0E **C-d1**	Door locking error	Door lock does not work after 1 minute elapsed. Check door lock switch, lock motor, and wire connectors. Normal Voltage: AC 120V, Lock motor coil.(1750~1850Ω at the room temperature)
SE **C-d0**	Shorted key	1. Any button is held for over 10 seconds or jammed. 2. There is a short circuit between oven control PCB cable connector or keypad ribbon.
tE	Touch pad ↔ Oven Control communication error	1. Keypad ribbon is loose. Check the ribbon connections at oven control PCB. 2. Oven control PCB (inside control box) defective. 3. Assy touch panel / membrane switch defective. Assy module (display PCB) defective for NE58**
C-23 **E-2E**	Meat Probe error	1. Measure the Meat Probe resistance:50KΩ at room temperature, replace the probe sensor if abnormal. 2. If the Meat probe resistance is normal, check the wire terminal or the wire harness. 3. Measure resistance of the Meat Probe connector on oven control PCB (Normal: 10KΩ ~ 11KΩ). Replace PCB main if abnormal.

Error Code List for Ovens

CODE	CAUSE	REASON / SOLUTION
E-0C dC	Partition switch error	1. Partition plate is not in place. 2. Partition switch defect. 3. Partition switch wire harness dropped off. 4. Oven control PCB is defective.
C-F0	PCB Main ↔ PCB Sub communication error	1. Connector (CN201) of Main PCB loose/disconnected. 2. Connector (CN02) of Sub PCB loose/disconnected. 3. Sub PCB or Main PCB defective,
C-F2	PCB Main ↔ Touch PCB/panel communication error.	1. Connector of Sub PCB loose/disconnected. 2. Sub PCB or Main PCB defective, 3. Touch PCB/panel defective.
C-A2	Motor operation error	1. Check the information code display location. • upper : Cooling motor information • lower : Air intake motor information 2. Check connect the wire harness 3. Check the voltage of CN200(PIN 1-3, 4-6)
C-30	PCB temp sensor Open / Short error	PCB temp sensor (Located on back side of PCB) is a NTC sensor. The resistance should be around 3.8 KΩ at room temperature. Replace the PCB main if abnormal.
C-31	PCB over temp error	PCB temp sensor resistance is lower than 872 Ω. Replace the PCB main
C-70	Steam sensor error open /short	Steam sensor open /short 1. Connector of Main PCB loose/disconnected. 2. Connector of steam sensor loose/disconnected. 3. steam sensor defective. 4. Main PCB defective.
C-72	Drain system error	Water level sensor sensed that water is remained after max time draining. 1. The ground wire on the steam generator loose or disconnected. 2. The pump motor wire connector generator loose or disconnected. 3. The pump motor defective. 4. The Main PCB defective.

Error Code List for Induction Cooktops

CODE	CAUSE	REASON / SOLUTION
CO	Top Sensor Error Open / Short	Defective top sensor, misplaced wires, or defective PCB. Resistance of top sensor at room temperature should be: (7.65KΩ~ 9.34KΩ) It also occurs when room temperature falls under -10˚C.
to	Top Sensor Open Error	Defective top sensor, misplaced wires, or defective PCB. Resistance of top sensor at room temperature should be: (7.65KΩ~ 9.34KΩ) It also occurs when room temperature falls under -10˚C.
	Top Sensor Short Error	Defective top sensor, misplaced wires, or defective PCB. (Resistance of top sensor at room temperature should be: (7.65KΩ~ 9.34KΩ)
C2	IGBT Sensor Error Open / Short	Defective IGBT sensor, misplaced wires, or defective PCB. (Resistance of IGBT sensor at 25˚C should be: 10kΩ) It also occurs when room temperature falls under -10˚C.
bo	IGBT Sensor Open Error (Inverter Module)	Defective IGBT sensor, misplaced wires, or defective PCB. (Resistance of IGBT sensor at 25˚C should be: 10kΩ) It also occurs when room temperature falls under -10˚C.
	IGBT Sensor Short Error (Inverter Module)	Defective IGBT sensor, misplaced wires, or defective PCB. (Resistance of IGBT sensor at 25˚C should be: 10kΩ)
C1 **ot**	Over Temperature Error	Temperature of cooktop surface is higher than 250˚C. • Empty cookware is on the working cooktop. • Top sensor defective • Inverter PCB defective.
	Pan Detection Error	• No cookware has been placed on the cooking zone. • Cookware is unsuitable for induction, or too small. • Inverter PCB defective.
FL **A2**	DC Motor Locking Error	Occurs when inverter cooling fan DC Motor cannot operate due to defects of PCB, wiring or motor blade disturbances.

Error Code List for Induction Cooktops

CODE	CAUSE	REASON / SOLUTION
SE d0	Touch Button Short Error	Control panel touch sensor is shorted/jammed. • Stuff / liquid has been left on the control panel. • More than one key is held down for over 8 ~ 10 seconds. • Defective Assy-Touch PCB
LE	Low Voltage Error	Occurs when the DC 12V has dropped under 9V. It may occur due to defects of PCB or LV transformer.
CE F0	Communication Error	It occurs when the communication between Display PCB and Inverter Module PCB is interrupted, due to defects of PCB, wiring mistake.
UP	Supply voltage Error	Power supply voltage is too high or too low. Check Input voltage power (208V ~ 240V).
F0	Communication error PCB main ↔ PCB sub	Communication error between PCB main and PCB sub. The wire connectors are loose/disconnected. PCB main or PCB sub defect.
F1	EEPROM Error	Communication error between PCB Main and EEP-ROM. The wire connectors are loose/disconnected. PCB main or Display PCB defect.
F2	Touch key data Information	The touch-enabled IC communicates abnormally. The wire connectors are loose/disconnected. Touch PCB or Display PCB defect.
C3	PCB temp sensor error.	PCB temp sensor (on PCB) is a NTC sensor. The resistance should be around 3.8 KΩ at room temperature. Replace the PCB main if abnormal.
C4	PCB relay temp sensor error.	PCB relay temp sensor (on PCB) is a NTC sensor. The resistance should be around 3.8 KΩ at room temperature. Replace the PCB main if abnormal.
d0	Cooktop touch control error	The Cooktop touch control abnormal. Any button is held for over 8 seconds or jammed. The wire connectors are loose/disconnected. Touch control PCB defect.

Error Code List for Induction Cooktop Ranges

<table>
<tr><th>CODE</th><th>CAUSE</th><th>REASON / SOLUTION</th></tr>
<tr><td colspan="3">E-84 & CE 11.
Communication error between Oven Control PCB ↔ Induction main (Right side inverter). E-84 is caused by no signal send out/receive from Induction main.
CE 11 is caused by no signal send out/receive from Oven main.</td></tr>
<tr><td> </td><td rowspan="2">Communication Error
Oven Control ↔
Induction main
Right side
inverter module</td><td>1. Power supply problem, no 240V on the power plug (L1&L2).
2. Check the Induction main (right side Inverter) fuse and wire connectors.
3. Induction main defective.</td></tr>
<tr><td> </td><td>Check whether there is a loose wire connector on oven control (the PCB inside control box),if there is no problem with wire connection, replace the defective oven control .</td></tr>
<tr><td colspan="3">E-85 & tE.
Communication error between Oven Control PCB ↔ Glass touch panel.
tE is caused by no signal send out/receive from Glass touch panel.
E-85 is caused by no signal send out/receive from Oven main.</td></tr>
<tr><td> </td><td rowspan="2">Communication Error

Touch signal not entered.</td><td>1.Touch Glass Control Panel ribbon is loose.
Check the ribbon connections at PCB touch.
2. Oven control (the PCB inside control box) defective.</td></tr>
<tr><td> </td><td>1.Touch Glass Control Panel ribbon is loose.
Check the ribbon connections at PCB touch.
2. Assy Glass Touch Panel defective.</td></tr>
<tr><td colspan="3">CE 00, CE 01, CE 02, CE 03
Communication error between Touch PCB L & R↔ Inverter PCB L & R.
00~03 are for each coils. (00 : LR coil, 01 : LF coil, 02 : RF coil, 03 : RR coil)</td></tr>
<tr><td>

 </td><td>Communication Error

Touch PCB L R
↔
left & right
inverters</td><td>Occurs when Assy Touch PCB can't communicate with each inverter channel. (channel : 00~03)
Assy Touch PCB L or R defective.
Assy Inverter PCB L or R defective.</td></tr>
</table>

Additional Error Code s for NE595/597/599, NE58F9**

CODE	CAUSE	REASON / SOLUTION
E - 81 & E - 83 Communication error between oven control PCB ↔ oven power relay PCB. E-81 is caused by no signal send out/receive from oven control PCB. E-83 is caused by no signal send out/receive from oven power relay PCB.		
E-81	Communication Error Oven Control PCB ↔ Oven Power Relay PCB	1. Check whether connector (CN02) of oven control (the PCB inside control box) is loose. 2. Check whether connector (CN201) of oven power relay PCB is connected properly. 3. If there is no problem with connection, replace both PCBs.
E-83		

Additional Error Codes for FE-N300/500

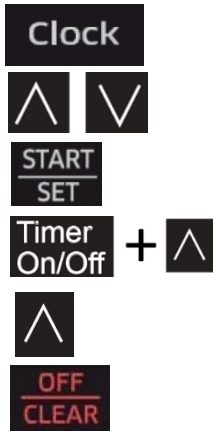
CODE	CAUSE	REASON / SOLUTION
E-53	EEPROM error	CPU fails to read or write data. PCB is defective.
E-54 & cE 56 Communication error between Oven main PCB ↔ Induction system (Power & Inverter). E-54 is caused by no signal send out/receive from Oven main. CE 56 is caused by no signal send out/receive from Induction system (Power & Inverter).		
E-54	Communication Error Oven Control ↔ Induction system (Power & Inverter)	Check whether there is a loose wire connector on oven control (the PCB inside control box),if there is no problem with wire connection, replace the defective oven control .
cE56		1. Power supply problem, no 240V, missing Line 2. 2. Check the Induction main (HYB30M) fuse and wire connectors. 3. Induction main (HYB30M) defective. 4. Inverter PCB defective.
E-55	Communication Error Touch signal not entered	1.Touch Glass Control Panel ribbon is loose. Check the ribbon connections at PCB touch. 2. Oven control (the PCB inside control box) defective. 3. Assy Glass Touch Panel defective.
E-56	Warning Error When Cooktop part has error	If some error occurred to Cooktop part, oven will display this error code and stop oven operation. Unplug the unit and plug back should solve the problem.

Oven Error Code Recall Program

- Error Code(s) can be stored in the PCB.
- There is a max of 5 error codes that can be stored.

Oven Error Code Recall program for NE59K3310*, NX58M3310*

1. Press ‘Clock’ key once.
2. Press ‘∧’ or ‘∨’ keys to set the time to 12:34., .
3. Press ‘Oven Start / Set’ key.
4. Press ‘ Timer On/Off’ and ‘∧’ keys at the same time for 3 seconds. The most recent error code will be displayed.
5. Keep on pressing ‘∧’ key to check the 5 most recent error codes.
6. Press ‘Oven Off’ key to return to normal display mode.

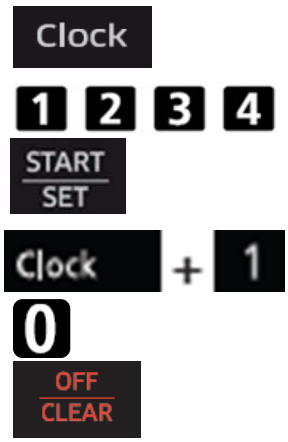


Oven Error Code Recall program for: NX58F56**, NX58H56**, NX58M6650*, NE59J76**, NE59J78*, NE59M7630*

1. Press ‘Clock’ key once.
2. Press number keys ‘1, 2, 3, 4’ .
3. Press ‘Oven Start / Set’ key.
4. Press ‘ Favorite Cook’ and ‘0’ keys at the same time for 3 seconds. The most recent error code will be displayed.
5. Keep on pressing “0” key to check the 5 most recent error codes.
6. Press ‘Oven Off’ key to return to normal display mode.

Oven Error Code Recall program for: NE58K9560*, NE59M9430/6850*, NX58M6650/6630*

1. Press ‘Clock’ key once.
2. Press number keys ‘1, 2, 3, 4’ .
3. Press ‘Oven Start / Set’ key.
4. Press ‘ Clock’ and ‘1’ keys at the same time for 3 seconds. The most recent error code will be displayed.
5. Keep on pressing “0” key to check the 5 most recent error codes.
6. Press ‘Oven Off’ key to return to normal display mode.

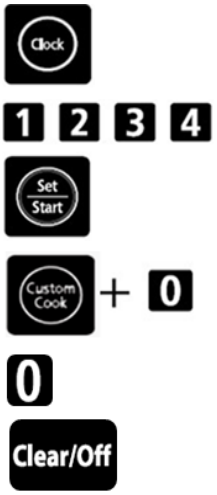


Oven Error Code Recall Program

- Error Code(s) can be stored in the PCB.
- There is a max of 5 error codes that can be stored.

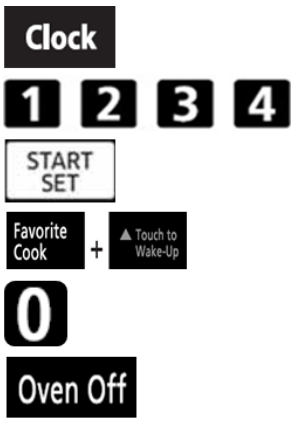
Oven Error Code Recall program for:
FCQ321, FTQ352 / 386 / 307, FE-R300 / 400 / 500 / 700, FE710DRS, FE-N300 / 500, NE595R0 / 595R1 / 597R0, NE595N0 / 597N0 / 599N1 FX510 / 710, NX583G0VB, NE59J3421SS, NE59M4320*

1. Press CLOCK Key once.
2. Press the CLOCK Key again to select AM.
3. Press number keys 1, 2, 3, 4.
4. Press the SET/START key.
5. Hold CUSTOM COOK and “0” key simultaneously for 2 seconds. The most recent error code will be displayed.
6. Keep on pressing “0” key to check the 5 most recent error codes.
7. Press the Clear/Off Key to return to normal operation.



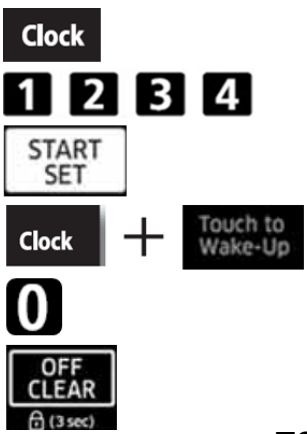
Oven Error Code Recall program for NE58F**, NE58H**

1. Press ‘Clock’ key once.
2. Press number keys ‘1, 2, 3, 4’ .
3. Press ‘Oven Start / Set’ key.
4. Press ‘ Favorite Cook’ and ‘Wake-up’ keys at the same time for 3 seconds. The most recent error code will be displayed.
5. Keep on pressing “0” key to check the 5 most recent error codes.
6. Press ‘Oven Off’ key to return to normal display mode.0



Oven Error Code Recall program for:
NY58J9850**, NE58K9850/9500**, NV51K665*D/S*

1. Press ‘Clock’ key.
2. Press number keys ‘1, 2, 3, 4’ .
3. Press ‘Oven Start / Set’ key.
4. Press ‘Clock’ and ‘Touch to Wake-Up’ keys at the same time for 2 seconds. The most recent error code will be displayed.
5. Keep on pressing “0” key to check the 5 most recent error codes.
6. Press ‘Oven Off’ key to return to normal display mode.



Oven Temperature Calibration Program

The temperature of the oven has been preset at the factory. In case of the oven being too hot or too cool, the temperature of the oven can be adjusted. The oven temperature can be adjusted ±35°F (±19°C).
To adjust the oven temperature, follow the below procedure:

Oven Temperature Calibration Program for:
FCQ321, FTQ352 / 386 / 307, FE-R300 / 400 / 500 / 700, FE-N300 / 500, FE710DRS, NE595R0 / 595R1 / 597R0, NE595N0 / 597N0 / 599N1, FX510 / 710, NX583G0VB, NE59J342**, NE59M4320*

1. Hold down BAKE and “0” buttons simultaneously for 3 seconds, the display will show AdJ 0.

2. Enter the adjustment that you want, (eg. Add / subtract 30°F), by using the number pad. Press the BAKE key for +/- sign.

3. Press the SET/START KEY to save the change.

Over Temperature Sensor Resistance Value Chart

degree F	degree C	ohms	degree F	degree C	ohms
0	-17.8	932.12	113	45	1170.17
14	-10	961.86	122	50	1188.93
23	-5	980.95	212	100	1374.93
32	0	1000.00	302	150	1558.01
41	5	1019.02	392	200	1738.06
50	10	1038.02	482	250	1915.39
59	15	1056.99	572	300	2089.69
68	20	1075.92	662	350	2261.07
77	25	1094.83	752	400	2429.52
86	30	1113.71	842	450	2595.05
95	35	1132.56	932	500	2757.65
104	40	1151.38	1000	538	2878.57

Oven Temperature Calibration Program

The temperature of the oven has been preset at the factory. In case of the oven being too hot or too cool, the temperature of the oven can be adjusted. The oven temperature can be adjusted ±35°F (±19°C).
To adjust the oven temperature, follow the below procedure:

*Oven Temperature Calibration NE59J78**/77**76**, NE58K9600*, NE59M4320/6850*, NX58J7750**

1. Hold down Broil and “1” buttons simultaneously for 3 seconds, the display will show AdJ 0.

2. Press the Broil button to select +/- sign.

3. Enter the adjustment that you want, (eg. 30˚F), by using the number pad.

4. Press the START/SET button to save the change.

Oven Temperature Calibration NE59K3310, NX58M3310**

1. Press Broil and ‘∧’ buttons simultaneously for 3 seconds. The display will show AdJ 0.

2. Enter the adjustment that you want, eg. 30 °F, by using the ‘∧’ or ‘∨’ button.

3. Press the Broil button to select +/- sign.

4. Press the START/SET button to save the change.

Use of “Broil” + “Number” Buttons NE59M9430/7630/6850/4320*, NX58M6650/6630*, NE58K9560**, NE59J78**/77**/76**

Press the Broil button and then the number button on the number pad to change various settings of the oven range.
The Option Selection function is available only when the oven is off.

#	Function	Function Specify
1	Temperature Calibration	To switch the oven temperature internally.
2	Temp. Unit (°F / °C)	Set the oven temperature display in Fahrenheit or Centigrade.
3	Auto Convection	Converts regular baking temperatures to convection baking temperatures.(25°C lower)
4	Time/date (12hr / 24hr)	Set the clock display in the 12-hour or 24-hour format
5	Energy saving	Automatically turns off the oven 12 hours after baking starts or 3 hours after broiling starts.
6	Sound ON/OFF	Mute the oven control.
7	Demo mode	Used by retailers for display purposes only.
8	Virtual Flame	Lets you set the virtual flame technology to appear or disappear.
9	Wi-Fi ON/OFF	Select the display language to active / deactive.

1. Temperature Calibration

The temperature of the oven has been preset at the factory. In case of the oven being too hot or too cool, the temperature of the oven can be adjusted. The oven temperature can be adjusted ±35°F (±19°C).
To adjust the oven temperature, follow the below procedure:

1. Hold down Broil and “1” buttons simultaneously for 3 seconds, the display will show AdJ 0.
2. Press the Broil button to select +/- sign (higher or lower than the current temperature).
3. Enter the adjustment that you want (1°F-35°F) by using the number pad.
4. Press START/SET to save the changes.

Use of “Broil” + “Number” Buttons NE59M9430/7630/6850/4320*, NX58M6650/6630*, NE58K9560**, NE59J78**/77**/76**

2. Temperature Scale Unit (Fahrenheit or Celsius) (Applied models only)

The oven temperature can be displayed in Fahrenheit or Celsius.
The factory default is in Fahrenheit.
To change the display between Fahrenheit and Celsius, follow the below procedure:
1. Hold down **Broil** and “**2**” buttons simultaneously for 3 seconds, the display will show **F** (Fahrenheit) or **C** (Celsius), the default is **F** (Fahrenheit) .
2. Press “**0**” to change the display between **F** and **C**.
3. Press **START/SET** to save the changes.

3. Convection auto conversion feature(Applied models only)

Converts regular baking temperatures to convection baking temperatures.(25°C lower)

1. Hold down Broil and “3” buttons simultaneously for 3 seconds, the display will show On (enabled) or OFF (disabled). The default setting is Con OFF.
2. Press “0” to select / change mode between Con On or Con OFF.
3. Press the START/SET button to save the change.

6. Sound On/Off

Oven controls can be operated with beeping sound or silently. The default setting is Snd On.
To turn the sound on or off, follow the below procedure:
1. Hold down **Broil** and “**6**” buttons simultaneously for 3 seconds, the display will show Snd On (sound on) or Snd OFF (sound off).
2. Press “**0**” to changes the mode between Snd On and Snd OFF.
3. Press **START/SET** to save the changes.

7. Demo mode (Applied models only)

This option is for display establishments purposes only, heating elements will not operate.
How to enable or disable the demo mode:
1. Hold down **Broil** and “**7**” buttons simultaneously for 3 seconds, the display will show “Test”.
2. Press “**0**” to change the mode between On and Off.
3. Press **START/SET** to save the changes.

9. Wi-Fi (AP) On/Off (Applied models only)

To turn the range’s Wi-Fi connection on or off, follow the below procedure:
1. Hold down **Broil** and “**9**” buttons simultaneously for 3 seconds, the display will show WiFi.
2. Press “**0**” to change the mode between On and Off.
3. Press **START/SET** to save the changes.

NOTE: If the range’s Wi-Fi connection is turned off, “easy setup” function will be disabled.

Control lockout

This feature is to lock / Unlock the buttons on the touch pad.
How to enable or disable the control lockout feature:
1. Hold down **START/SET** button for **3** seconds, Loc and the lock icon will appear on the display.

- All functions must be cancelled before control lockout is activated.
- This function is available only when the oven temperature is under 400 °F.

Use of “Options” Button NE58H9970**

Press the Options button and then press the number button on the number pad to change various settings of the oven range.
The Option Selection function is available only when the oven is off.

Options	Feature
1. Temp Adjust	Lets you correct the temperature in the oven.
2. Temp Unit	Lets you program the oven control to display temperatures in Fahrenheit or Centigrade.
3. Auto Conversion	The convection auto conversion feature automatically converts entered regular baking temperatures to convection baking temperatures.
4. Time of Day	Lets you set the clock to display the time of day in the 12 hour or 24 hour mode.
5. 12 hour energy saving	This feature automatically turns off the oven after 12 hours during baking functions or after 3 hours during a broil function.
6. Language	Lets you select English, French, or Spanish.
7. Sound On/Off	Lets you set the oven controls to operate silently.
8. Virtual Flame	Lets you set the virtual flame technology to appear or disappear.
9. Demo mode	This option is for use by retail establishments for display purposes only.

1. Temperature Calibration

The temperature of the oven has been preset at the factory. In case of the oven being too hot or not hot enough, the temperature of the oven can be adjusted.
The oven temperature can be adjusted by ±35°F (±19°C).
To adjust the oven temperature, follow the below procedure:

1. Press the **Options** button, and then “**1**” on the number pad. The display will show **AdJ 0**.
2. Press the **Options** button to select **+/-** sign (higher or lower than the current temperature).
3. Enter the adjustment that you want (**1°F-35°F**) by using the number pad.
4. Press **START/SET** to save the changes.

Use of “Options” Button NE58H9970**

2. Temperature Scale Unit (Fahrenheit or Celsius)

Oven temperature can be displayed in Fahrenheit or Celsius. The factory default is to display in Fahrenheit.
To change the display between Fahrenheit and Celsius, follow the below procedure:
1. Press **OPTIONS**, and then “**2**” on the number pad.
2. Press “**1**” for Fahrenheit or “**2**” for Celsius on the number pad.
3. Press **START/SET** to save the changes.

6. Language

The language can be displayed in English, French, or Spanish. The default is in English.
To change the language on the display, follow the below procedure:
1. Press **OPTIONS**, and then “**6**” on the number pad.
2. Press “**1**” (EN), “**2**” (FR) or “**3**” (SP) on the number pad.
3. Press **START/SET** to save the changes.

7. Sound On/Off

Oven controls can be operated with beeping sound or silently. To turn the sound on or off, follow the below procedure:
1. Press **OPTIONS**, and then “**7**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

8. Virtual flame

To enable or disable the virtual flame function, follow the below procedure:
1. Press **OPTIONS**, and then “**8**” on the number pad.
2. Pressing “**0**” changes the mode between On and Off.
3. Press **START/SET** to save the changes.

9. Demo mode

This option is for display establishments purposes only, heating elements will not operate and the display will show “Test”..
How to enable or disable the demo mode:
1. Press **OPTIONS**, and then “**9**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

Control lockout

This feature is to lock / Unlock the buttons on the touch pad.
How to enable or disable the control lockout feature:
1. Hold down **START/SET** button for **3** seconds, Loc and the lock icon will appear on the display.

- All functions must be cancelled before control lockout is activated.
- This function is available only when the oven temperature is under 400 °F.

Use of “Options” Button
NE58F95/97**, NE58H9950**, NE58K9500**

Press the Options button and then press the number button on the number pad to change various settings of the oven range.
The Option Selection function is available only when the oven is off.

Options	Feature
1. Temp Adjust	Lets you correct the temperature in the oven.
2. Temp Unit	Lets you program the oven control to display temperatures in Fahrenheit or Centigrade.
3. Auto Conversion	The convection auto conversion feature automatically converts entered regular baking temperatures to convection baking temperatures.
4. Time of Day	Lets you set the clock to display the time of day in the 12 hour or 24 hour mode.
5. 12 hour energy saving	This feature automatically turns off the oven after 12 hours during baking functions or after 3 hours during a broil function.
6. Language	Lets you select English, French, or Spanish.
7. Sound On/Off	Lets you set the oven controls to operate silently.
8. Demo mode	This option is for use by retail establishments for display purposes only.

1. Temperature Calibration

The temperature of the oven has been preset at the factory. In case of the oven being too hot or not hot enough, the temperature of the oven can be adjusted.
The oven temperature can be adjusted by ±35°F (±19°C).
To adjust the oven temperature, follow the below procedure:

1. Press the **Options** button, and then “**1**” on the number pad. The display will show **AdJ 0**.
2. Press the **Options** button to select **+/-** sign (higher or lower than the current temperature).
3. Enter the adjustment that you want (**1°F-35°F**) by using the number pad.
4. Press **START/SET** to save the changes.

Use of “Options” Button
NE58F95/97**, NE58H9950**, NE58K9500**

2. Temperature Scale Unit (Fahrenheit or Celsius)

Oven temperature can be displayed in Fahrenheit or Celsius. The factory default is to display in Fahrenheit.
To change the display between Fahrenheit and Celsius, follow the below procedure:
1. Press **OPTIONS**, and then “**2**” on the number pad.
2. Press “**1**” for Fahrenheit or “**2**” for Celsius on the number pad.
3. Press **START/SET** to save the changes.

6. Sound On/Off

Oven controls can be operated with beeping sound or silently. To turn the sound on or off, follow the below procedure:
1. Press **OPTIONS**, and then “**6**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

7. Language

The language can be displayed in English, French, or Spanish. The default is in English.
To change the language on the display, follow the below procedure:
1. Press **OPTIONS**, and then “**7**” on the number pad.
2. Press “**1**” (EN), “**2**” (FR) or “**3**” (SP) on the number pad.
3. Press **START/SET** to save the changes.

8. Demo mode

This option is for display establishments purposes only, heating elements will not operate and the display will show “Test”.
How to enable or disable the demo mode:
1. Press **OPTIONS**, and then “**8**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

Control lockout

This feature is to lock / Unlock the buttons on the touch pad.
How to enable or disable the control lockout feature:
1. Hold down **START/SET** button for **3** seconds, Loc and the lock icon will appear on the display.

- All functions must be cancelled before control lockout is activated.
- This function is available only when the oven temperature is under 400 °F.

Use of “Options” Button
NY58J9850**, NX58H95**/99**, NX58K9500**

Press the Options button and then press the number button on the number pad to change various settings of the oven range.
The Option Selection function is available only when the oven is off.

Setting		Description
1	Favorite Cook	Create a favorite cooking mode with 3 different personalized settings.
2	Temperature	Adjust the oven temperature to your needs.
3	Temp. Unit (°F / °C)	Set the oven control to display temperatures in Fahrenheit or Centigrade.
4	Auto Conversion	Converts regular baking temperatures to convection baking temperatures.
5	Time/date (12hr / 24hr)	Set the clock to display the time in the 12-hour or 24-hour format.
6	Energy saving	Automatically turns off the oven 12 hours after baking starts or 3 hours after broiling starts.
7	Language	Select a preferred language from English, French, or Spanish.
8	Sound	Mute the oven.
9	Demo mode	Used by retailers for display purposes only.

2. Temperature Calibration

The temperature of the oven has been preset at the factory. In case of the oven being too hot or not hot enough, the temperature of the oven can be adjusted.
The oven temperature can be adjusted by ±35°F (±19°C).
To adjust the oven temperature, follow the below procedure:

1. Press the **Options** button, and then “**2**” on the number pad. The display will show **AdJ 0**.
2. Press the **Options** button to select **+/-** sign (higher or lower than the current temperature).
3. Enter the adjustment that you want (**1°F-35°F**) by using the number pad.
4. Press **START/SET** to save the changes.

Use of “Options” Button
NY58J9850**, NX58H95**/99**, NX58K9500**

3. Temperature Scale Unit (Fahrenheit or Celsius)

Oven temperature can be displayed in Fahrenheit or Celsius. The factory default is to display in Fahrenheit.
To change the display between Fahrenheit and Celsius, follow the below procedure:
1. Press **OPTIONS**, and then “**3**” on the number pad.
2. Press “**1**” for Fahrenheit or “**2**” for Celsius on the number pad.
3. Press **START/SET** to save the changes.

7. Language

The language can be displayed in English, French, or Spanish. The default is in English.
To change the language on the display, follow the below procedure:
1. Press **OPTIONS**, and then “**7**” on the number pad.
2. Press “**1**” (EN), “**2**” (FR) or “**3**” (SP) on the number pad.
3. Press **START/SET** to save the changes.

8. Sound On/Off

Oven controls can be operated with beeping sound or silently. To turn the sound on or off, follow the below procedure:
1. Press **OPTIONS**, and then “**8**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

9. Demo mode

This option is for display establishments purposes only, heating elements will not operate and the display will show “Test”.
How to enable or disable the demo mode:
1. Press **OPTIONS**, and then “**9**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

Control lockout

This feature is to lock / Unlock the buttons on the touch pad.
How to enable or disable the control lockout feature:
1. Hold down **START/SET** button for **3** seconds, Loc and the lock icon will appear on the display.

- All functions must be cancelled before control lockout is activated.
- This function is available only when the oven temperature is under 400 °F.

Use of “Options” Button NE58K9850**

Press the Options button and then press the number button on the number pad to change various settings of the oven range.
The Option Selection function is available only when the oven is off.

Options	Feature
1. Temp Adjust	Lets you correct the temperature in the oven.
2. Temp Unit	Lets you program the oven control to display temperatures in Fahrenheit or Centigrade.
3. Auto Conversion	The convection auto conversion feature automatically converts entered regular baking temperatures to convection baking temperatures.
4. Time of Day	Lets you set the clock to display the time of day in the 12 hour or 24 hour mode.
5. 12 hour energy saving	This feature automatically turns off the oven after 12 hours during baking functions or after 3 hours during a broil function.
6. Language	Lets you select English, French, or Spanish.
7. Sound On/Off	Lets you set the oven controls to operate silently.
8. Wi-Fi On/Off	Lets you set the wi-fi network to deactivate.
0. Demo mode	This option is for use by retail establishments for display purposes only.

1. Temperature Calibration

The temperature of the oven has been preset at the factory. In case of the oven being too hot or not hot enough, the temperature of the oven can be adjusted.
The oven temperature can be adjusted by ±35°F (±19°C).
To adjust the oven temperature, follow the below procedure:

1. Press the **Options** button, and then “**1**” on the number pad. The display will show **AdJ 0**.
2. Press the **Options** button to select **+/-** sign (higher or lower than the current temperature).
3. Enter the adjustment that you want (**1°F-35°F**) by using the number pad.
4. Press **START/SET** to save the changes.

Use of “Options” Button NE58K9850**

2. Temperature Scale Unit (Fahrenheit or Celsius)

Oven temperature can be displayed in Fahrenheit or Celsius. The factory default is to display in Fahrenheit.
To change the display between Fahrenheit and Celsius, follow the below procedure:
1. Press **OPTIONS**, and then “**2**” on the number pad.
2. Press “**1**” for Fahrenheit or “**2**” for Celsius on the number pad.
3. Press **START/SET** to save the changes.

6. Language

The language can be displayed in English, French, or Spanish. The default is in English.
To change the language on the display, follow the below procedure:
1. Press **OPTIONS**, and then “**6**” on the number pad.
2. Press “**1**” (EN), “**2**” (FR) or “**3**” (SP) on the number pad.
3. Press **START/SET** to save the changes.

7. Sound On/Off

Oven controls can be operated with beeping sound or silently. To turn the sound on or off, follow the below procedure:
1. Press **OPTIONS**, and then “**7**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

8. Wi-Fi On/Off

To turn the range’s Wi-Fi connection on or off, follow the below procedure:
1. Press OPTIONS, and then 8 on the number pad.
2. Press 1 (On) or 2 (Off) on the number pad.
3. Press START/SET to save the changes.

NOTE: If the range’s Wi-Fi connection is turned off, “easy setup” function will be disabled.

0. Demo mode

This option is for display establishments purposes only, heating elements will not operate and the display will show “Test”..
How to enable or disable the demo mode:
1. Press **OPTIONS**, and then “**0**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

Control lockout

This feature is to lock / Unlock the buttons on the touch pad.
How to enable or disable the control lockout feature:
1. Hold down **START/SET** button for **3** seconds, Loc and the lock icon will appear on the display.

- All functions must be cancelled before control lockout is activated.
- This function is available only when the oven temperature is under 400 °F.

Use of “Options” Button NV51K6650**

Press the Options button and then press the number button on the number pad to change various settings of the oven range.
The Option Selection function is available only when the oven is off.

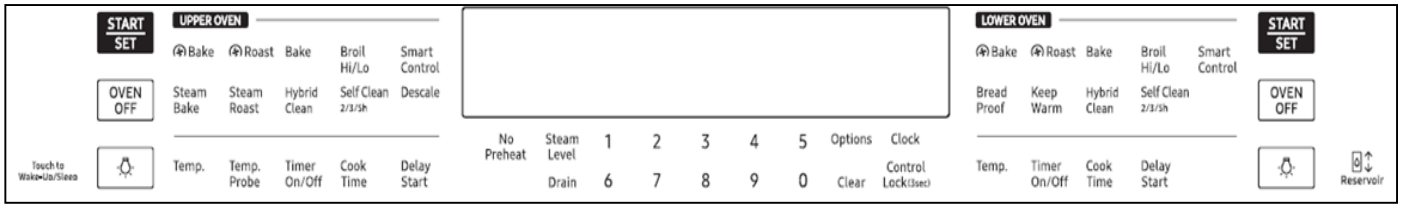
Options	Feature
1. Temp Adjust	Lets you correct the temperature in the oven.
2. Temp Unit	Lets you program the oven control to display temperatures in Fahrenheit or Centigrade.
3. Auto Conversion	Lets you set the Auto Conversion feature so that the oven automatically converts entered regular baking temperatures to convection baking temperatures, and then displays the convection temperatures.
4. Time of Day	Lets you set the clock to display the time of day in the 12 hour or 24 hour mode.
5. 12 hour energy saving	This feature automatically turns off the oven after 12 hours during baking functions or after 3 hours during a broil function.
6. Sound On/Off	Lets you set the oven controls to operate silently.
7. Wi-Fi On/Off	Lets you activate and de-activate the oven's wi-fi connection.
0. Demo mode	This option is for use by retail establishments for display purposes only.

1. Temperature Calibration

The temperature of the oven has been preset at the factory. In case of the oven being too hot or not hot enough, the temperature of the oven can be adjusted.
The oven temperature can be adjusted by ±35°F (±19°C).
To adjust the oven temperature, follow the below procedure:

1. Press the **Options** button, and then “**1**” on the number pad. The display will show **AdJ 0**.
2. Press the **Options** button to select **+/-** sign (higher or lower than the current temperature).
3. Enter the adjustment that you want (**1°F-35°F**) by using the number pad.
4. Press **START/SET** to save the changes.

Use of “Options” Button NV51K6650**



2. Temperature Scale Unit (Fahrenheit or Celsius)

Oven temperature can be displayed in Fahrenheit or Celsius. The factory default is to display in Fahrenheit.
To change the display between Fahrenheit and Celsius, follow the below procedure:
1. Press **OPTIONS**, and then “**2**” on the number pad.
2. Press “**1**” for Fahrenheit or “**2**” for Celsius on the number pad.
3. Press **START/SET** to save the changes.

6. Sound On/Off

Oven controls can be operated with beeping sound or silently. To turn the sound on or off, follow the below procedure:
1. Press **OPTIONS**, and then “**6**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

7. Wi-Fi On/Off

To turn the range’s Wi-Fi connection on or off, follow the below procedure:
1. Press OPTIONS, and then 7 on the number pad.
2. Press 1 (On) or 2 (Off) on the number pad.
3. Press START/SET to save the changes.
NOTE: If the range’s Wi-Fi connection is turned off, “easy setup” function will be disabled.

0. Demo mode

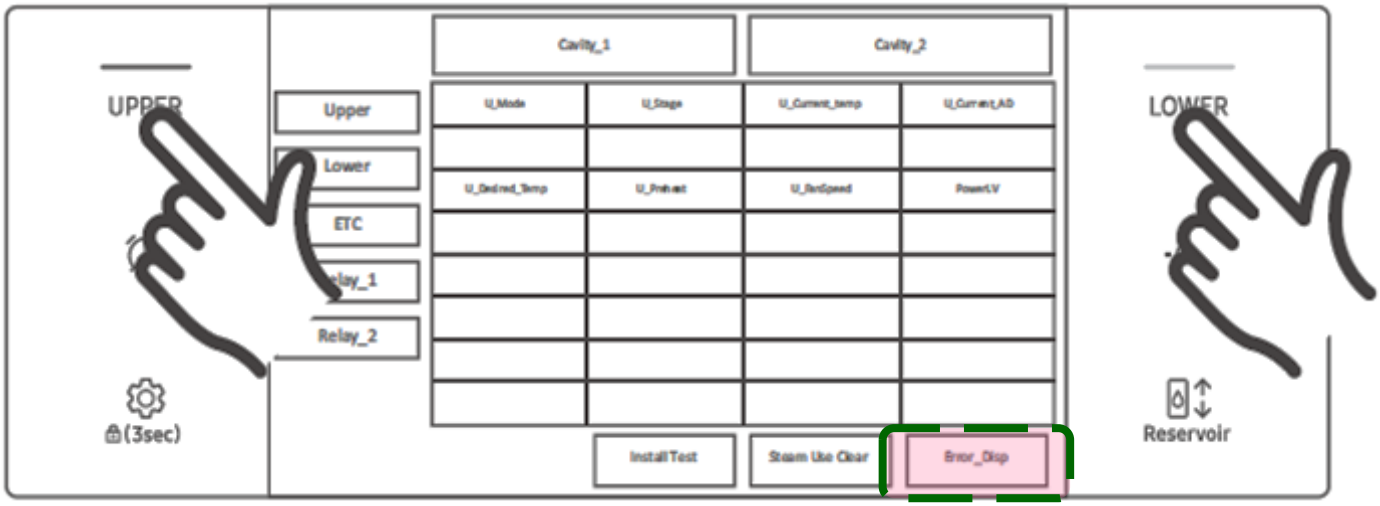
This option is for display establishments purposes only, heating elements will not operate and the display will show “Test”.
How to enable or disable the demo mode:
1. Press **OPTIONS**, and then “**0**” on the number pad.
2. Press “**1**” (On) or “**2**” (Off) on the number pad.
3. Press **START/SET** to save the changes.

Control lockout

This feature is to lock / Unlock the buttons on the touch pad.
How to enable or disable the control lockout feature:
1. Hold down **START/SET** button for **3** seconds, Loc and the lock icon will appear on the display.

- All functions must be cancelled before control lockout is activated.
- This function is available only when the oven temperature is under 400 °F.

Oven data checking Mode for wall ovens



Hold down the following buttons simultaneously for 5 seconds to enter the Oven data checking Mode:

- **Upper** and **Lower** buttons for double wall oven:
  NV51K7770D*, NV51K7772D*, NV51M9770D*
- **Flex Upper** and **Flex Lower** buttons for single wall oven
  NV51K7770S*, NV51K7772S*, NV51M9770S*
- **MICROWAVE** and **LOWER OVEN** buttons for Microwave & oven combo
  NQ70M6650*, NQ70M7770*, NQ70M9770*

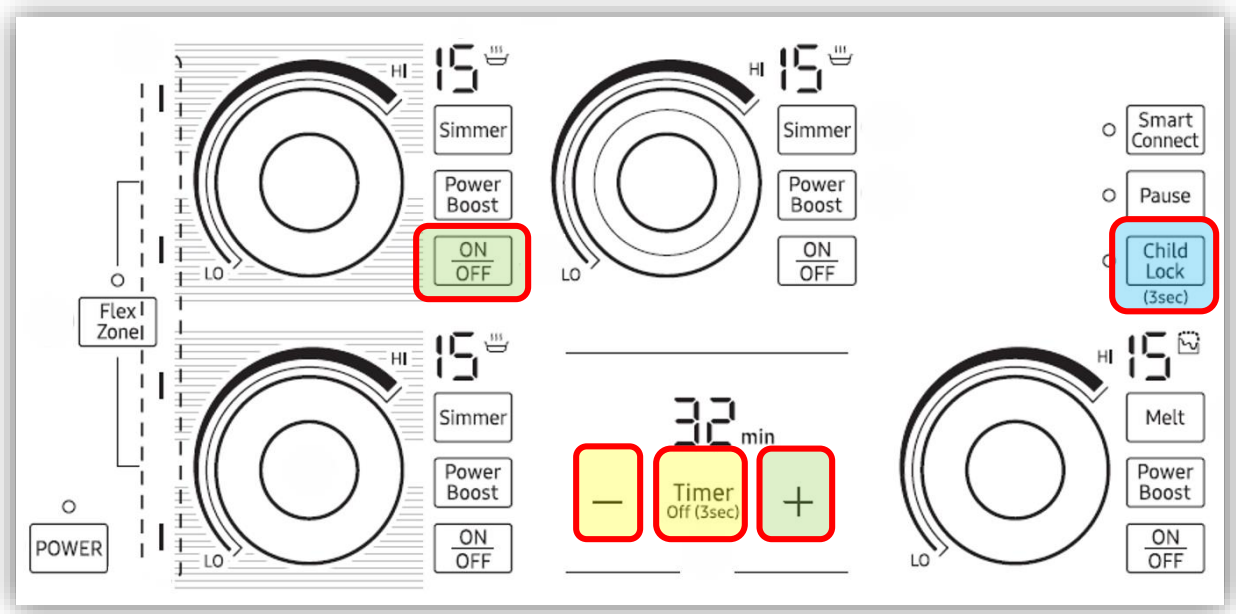
Once entering the oven data checking Mode, press the desired button to check the oven data.
e.g. touch the “**Error_Disp**” on the information screen, the most recent error code will be displayed.
Keep on pressing “**Error_Disp**” to check the 5 most recent error codes.

Hold down the following buttons simultaneously for 5 seconds to exist the Oven data checking Mode and return to normal operation.

- **Upper** and **Lower** buttons for double wall oven:
  NV51K7770D*, NV51K7772D*, NV51M9770D*
- **Flex Upper** and **Flex Lower** buttons for single wall oven
  NV51K7770S*, NV51K7772S*, NV51M9770S*
- **MICROWAVE** and **LOWER OVEN** buttons for Microwave & oven combo
  NQ70M6650*, NQ70M7770*, NQ70M9770*

Induction Cooktop Test Program

NZ36M9880* / NZ30M9880*
NZ36K7880* / 7882*, NZ30K7880* / 7882*



Demo Mode for induction cooktop

1. At power off , Hold down the “**Child Lock**” key for 3 seconds to lock the control.
2. Hold down the “**Timer**” key for 3 seconds. An acoustic signal will sound.
3. Hold down the “**Minus(-)**” key for 3 seconds within 10 seconds. An acoustic signal will sound. Demo mode will be activated.
5. To exit the Demo mode, repeat No.1~3 procedure.

Auto Check Mode for induction cooktop

1. At power off , Hold down the “**Child Lock**” key for 3 seconds to lock the control.
2. Hold down the “Left-Rear burner ON/OFF” key for a 3 seconds.
3. Hold Down the “+” key for 3 seconds, Auto Check mode will be activated.
5. If an issue is encountered during test, the test will be stopped and error code displayed.

Digital Appliances Division

SAMSUNG

Sixth Edition

MICROWAVE OVEN / OTR ERROR CODE LIST

Refer to the STG &service manual on the GSPN for more information

Created By: Guanniu (Victor) Han

Microwave Oven / OTR Error Code List

Index

Microwave Oven / OTR Error Code List **89 ~ 91**

ME21M706**

ME16K30 / ME21K60* / ME21K70***

MC17J8000/8100*

ME16H* / ME17H* / ME18H* / ME20H* / ME21H*

ME18F* / ME21F*

MC11J703* / K703*

MC12J8035*

MC17F808KDT**

SMV7165STD

ME179KFETSR

SMH1611, 1622, 1713, 1816, 1927, 2117, 3150, 4150, 5140, 5165, 6140, 6150, 6160, 6165, 7150, 7155, 7159, 7174, 7175, 7178, 7185, 7187, 8165, 8187, 9151, 9187, 9207

MS19M8000

MG14H3020* / J3020*

MS11J5023AS

MS14K6000AS

MT1044WB

MW7695GS

AMW8113

BMHC815

Microwave Ovens / OTRs Error Code List

Code	Cause	Reason/Solution
Keypad Error		
SE **C-d0**	Shorted key	1. Any button is held for over 10 seconds or jammed. 2. There is a short circuit between PCB main cable connector or keypad ribbon.
TE **C-F2**	Touch key Error	1. Keypad ribbon is loose at the PCB main. 2. PCB main defective. 3. Assy touch pad / membrane switch defective.
E-83 **C-F0**	Communication error PCB main ↔ display	Functional error. Turn off and restart. 1. Loose wire connectors. 2. Display board defect. 3. Main PCB defect.
E-A1 **C-A1**	Damper Error	Damper Positioning Error (40 seconds). Replace Damper Motor or Damper SW.
E-0*	**Operation Errors (for convection oven models)**	
E-01	Door Open	Door open error. The door opens while it should not be opened.
E-02	Oven cook Temp Error	Oven cooking temperature cannot reach the setting within the set time. Check oven heater, sensor, and PCB.
E-03	Grill Cook Temp Error	Grill cooking temperature cannot reach the setting within the set time. Check heater, oven sensor, and PCB.
E-04	Convection Cook Temp Error	Convection cooking temperature cannot reach the setting within set time. Check convection fan, convection heater, oven sensor, and PCB.
E-05	Combination Cook Temp Error	Combination cooking temperature cannot reach the setting within set time. Check oven heater, oven sensor, MW heating system, and PCB.
E-06	Sensing Error	Sensor fails to sense that the swing heater has stopped for 20 seconds during cooking.
E-08	Oven Error	Spit air get into the oven cavity.
E-09	Damper Error	The damper is not set to be positioned for 2 minutes.

Microwave Ovens / OTRs Error Code List

Code	Cause	Reason/Solution
E-1*	Gas Sensor Error	
E-11	Sensor Open	Open sensor, loose wire connector, or defective PCB. If error code appears when starting sensing cycle, replace the PCB main.
E-12	Sensor Short	Check if the sensor is shorted, or PCB defect. If error code appears when starting sensing cycle, replace the PCB main.
E-13	Sensing Time Error	Sensor failed on the 1st gas discharge rate checking. Check sensor, or defective PCB. If error code appears when starting sensing cycle, replace the PCB main.
E-14	Dry Up / No Load	Check for the presence of dry food or if the oven is empty. If error code appears when starting sensing cycle, replace the PCB main.
E-2*	Temp Sensor Error	
E-21	Sensor Open	Open sensor, loose wire connector, or defective PCB. If error code appears when starting sensing cycle, replace the PCB main.
E-22	Sensor Short	Check if the sensor is shorted, or PCB defect. If error code appears when starting sensing cycle, replace the PCB main.
E-23	Preheating Time Error	Preheating does not reach the preset temperature within 30 minutes. Check heater, sensor, or defective PCB.
E-24 **C-20**	Over Temperature	Oven temperature is higher than 500F˚F(265˚c) while oven is working. Check heater, sensor, or defective PCB.
E-25 **C-21**	Abnormal Temperature	Abnormal Temperature is detected by PCB. Check sensor, or defective PCB. Cool down unit and restart.
E-26	Heating Error	Over Temperature Error occurs within first 3 minutes of cooking but not exceed the high limit. Defective sensor, heater, or PCB.
E-6*	Humidity Sensor Error	
E-61	Sensor Open	Check if there is an open sensor, loose wire connector, or defective PCB.
E-62	sensor Short	Check if the sensor shorted, or defective PCB.
E-63	Sensing Time Error	Sensor failed on the 1st humidity checking. Check sensor, or defective PCB.

Code	Cause	Reason/Solution
E-3*	Weight Sensor Error	
E-31	Sensor Open	Value of HEX is above “FF for 5 Seconds”. Check if there is an open sensor, loose wire connector, or defective PCB.
E-32	Sensor Short	Check if the sensor shorted, or defective PCB.
E-33	Sensing Time Error	No temperature change 30 seconds after the weight sensing operation starts. Check sensor, or defective PCB.
E-34	Abnormal Sensor	The initial value of weight sensing is abnormal. (±28” as value of HEX) Check sensor, or defective PCB.
E-35	No Sensing Valve	Sensor failed on the weight sensing. Check sensor, or defective PCB.
E-36	Door Open	Door opens during sensor cooking. Check the door latches & door switches.
E-4*	Easy/Ph Sensor Error	
E-41	Sensor Open	Check if there is an open sensor, loose wire connector, or defective PCB.
E-42	Sensor Short	Check if the sensor shorted, or defective PCB.
E-43	Sensing Error	Sensor failed on the 1st temperature checking. Check sensor, or defective PCB.
E-44	Dry Up / No Load	Check if the food has already dry or the oven is empty. Check sensor, or defective PCB.
E-45	Cool Error	Cooling Error, not temperature change 3 minutes after cycle starts. Remove moisture from sensor and restart.
E-46	Time Out	Primary open more than 3 Minutes. Check sensor, or defective PCB.
E-47	Door Open	Door opens during sensor cooking. Check the door latches & door switches. Cancel the present mode and restart.
E-5*	EEPROM Error	
E-51	Open Error	Open circuit, Check wire harness, PCB.
E-53	Format Error	Read/Write Error.
E-54	Reset Error	Failed on initial set.

Digital Appliances Division

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Dishwasher
Test Mode & Error Code List

Applied Models

DW80M3021**

DW80M2020**

DW80M9550 / 9600 Series

DW80K5050 / 7050 Series

DW80K2021**

DW80J7550 / 9945 Series

DW80J3020**

DW80H9930 / 50 / 70 Series

DW80F600 / 800 Series

DMT350 / 610 / 800 Series

DW7933**

DMT210 / 300 / 400 Series

DMR57 / 77 / 78 Series

Refer to the STG & service manual on the GSPN for more information

Created By: Guanniu (Victor) Han

Dish Washer Test Mode & Error Code list

Index

Error Codes

Error Code List for DW80H9930/50/70, DW80J7550/9945, DW80K5050/7050, and DW80M9600/9550/3021..... **93 ~ 95**
Error Code List for DW80M3020..... **96 ~ 97**
Error Code List for DW80J3020, DW80K2012 ..... **98 ~ 99**
Components / Thermistor Resistance Value Table..... **99**
Error Code List for DW80F800..... **100 ~ 101**
Error Code List for DW80F600 ..... **102 ~ 103**
Error Code List for DMR57/77/78, DMT350/610/800 ..... **104 ~ 105**
Error Code List for DMT210/300..... **106 ~ 107**
Error Code List for DMT400..... **108 ~ 109**
Error Code List for DW7933..... **110 ~ 111**

Test Modes

Test Mode for DW80M3021* / 9550* / 9600*..... **112 ~ 113**
Test Mode for DW80M3020..... **114 ~ 115**
Cycle Chart based on DW80M3020..... **114**
Test Mode for DW80K5050/7050..... **116 ~ 117**
Test Mode for DW80H9930/50/70 and DW80J7550/9945..... **118 ~ 120**
Test Mode for DW80J3020, DW80K2021..... **121**
Test Mode for DMT350/610/800, DW80F800..... **122**
Test Mode for DMT400, DW80F600*..... **123**
Test Mode for DW7933..... **124**
Test Mode for DMT210/300..... **123**
Test Mode for MR57/77/78..... **126**

Error Code List for:

DW80H9930 9950 / 9970, DW80J7550 / 9945, DW80K5050 / 7050, DW80M3021 / 9550 / 9600

Code	Meaning	Occurring Condition	Failure Components
4E **4C**	Water Supply Error (Level)	1. When the flow meter pulse is 10 or less within 20 seconds after the water supply starts. 2. When the water supply is not completed 5 minutes after it starts.	• Water Pressure is too low (lower than 20 PSI). • Water supply Valve defect • Flow Meter defect. • Water supply Valve terminal not connected. • Water supply Valve clogged. • Main PCB defect or no feedback to PCB.
4E5 **4C5**	Water Supply Error	When the flow meter pulse is 200 at the Non-water supply cycles.	• Water valve is defective.
1E **1C**	Low water level Error	When power consumption of main motor is 25% ~ 50% lower than it should be at targeted RPM.	• Filter micro Clogged. • Too much Suds • Main PCB defect.
5E **5C, 5C1 ~ 5C5**	Drain Error	Drain pump power consumption exceed 15W after 3 times of drain pump operation.	• Drain pump defect. • Drain hose/pump Clogged. • Main PCB defect. • Inverter PCB is out of order if 5C1 ~ 5C5 code occurred.
oE **oC**	Over flow Error	When high limit sensor detects 3.5V or lower for 5 seconds.	• Water supply Valve is not closing properly. • Flow Meter defect. • Main PCB defect.
LE **LC**	Leakage Error	When leakage sensor detects 4.5V or lower for 1~3 second. Once there is enough water accumulated around the leakage sensor, “LE / LC” shows right away regardless of power been on or off.	• Water supply Valve leaking. • Hose connection leaking. • Sump Assembly leaking. • Tub assembly leaking. • Drain Pump assembly leaking. • Main PCB defect.

Error Code List for:

DW80H9930 9950 / 9970, DW80J7550 / 9945, DW80K5050 / 7050, DW80M3021 / 9550 / 9600

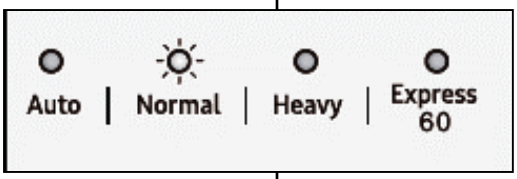
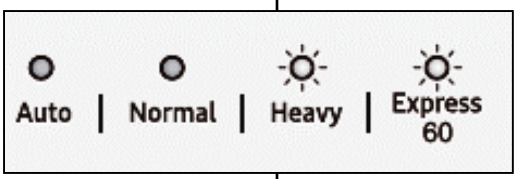
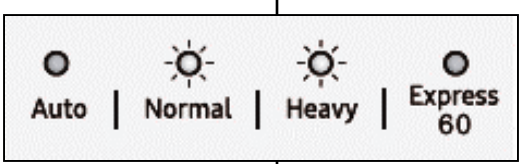
Code	Meaning	Occurring Condition	Failure Components
HE1 **HC1**	Heater Error	The temperature change is 4℃ or less within the first 10 minutes after the heating starts	• Heater defect • Heater Relay defect • Heater terminal not connected • Main Wire-Harness defect • Main PCB defect • No water inside
HE **HC**	High Temperature Error	When 80℃ or higher is detected during operation for more than 3 seconds.	• Thermistor defect • Main PCB defect
tE **tC**	Temperature sensor Error	Abnormal Voltage signal from temperature sensor (4.5V and higher or 0.2V and lower) is detected for over 3 seconds.	• Thermistor not connected • Thermistor Defect • Main PCB defect
PE **PC**	Half load function Error	Half load function ready (Switch Close) status is not detected 2 minutes after the Distributor motor starts	• Distributor motor defect • Half load switch terminal not connected • Main PCB defect • The cam position is incorrect.
AE **AC**	Function Error	Communication error between control panel and PCB main.	• Functional error. Turn off and restart. • Loose wire connectors. • Display board defect. • Main PCB defect.
bE2 **bC2**	Button Error	When the button is held for over 30 seconds or jammed.	• Sub PCB defect. • Main PCB defect.
bE3 **bC3**	Function Error	Communication error between the PCB Sub and the touch panel.	• The touch button is defect. • The PCB Sub or touch button PCB is not connected properly.
dE **dC**	Door open warning	When door is open in test mode only.	• Door is not closed • Door lock switch defect • Main PCB defect

Error Code List for:

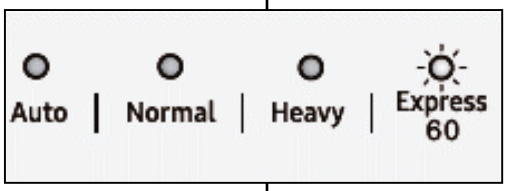
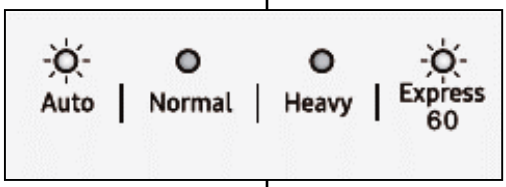
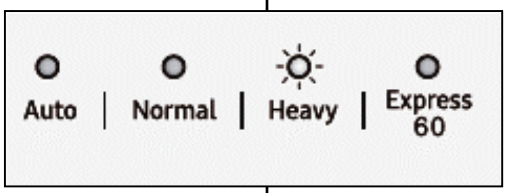
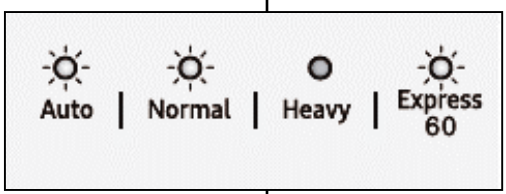
DW80H9930 9950 / 9970, DW80J7550 / 9945, DW80K5050 / 7050, DW80M3021 / 9550 / 9600

Code	Meaning	Occurring Condition	Failure Components
AE6 **AE6**	Function Error	Communication between PCB main and Inverter PCB.	• The PCB main defect. • The Inverter PCB defect. • Loose wire connectors between the PCB main and Inverter PCB.
3E **3C, 3C1 ~ 3C6**	Main Motor Error	When PCB Main received the main motor error 11 times from the inverter while wash/rinse operation, Main motor speed is 2400 RPM or less when target motor speed is 2600 RPM or higher.	• Main motor is stuck caused by foreign object. • Main motor defect. • The PCB main defect. • The Inverter PCB defect.
9E1 **9C1** **9C2**	Abnormal DC Voltage	If blackout or DC Link voltage is too high or too low.	• Abnormal power voltage is supplied. • The Inverter PCB defect.
7E **7C**	Vane Function Error	1. Vane doesn't move at all. 2. Vane moving range is abnormal, cannot reach the initial position. 3. Vane moving time is 21 seconds or less from initial position to initial position.	• Motor gear is out of order • Sensor vane is out of order • When the vane is blocked • Vane belt broken or not engaged.
dC3	Auto Door Open Error	The door opening status is not sensed when the Auto Door Open device operates. (Auto Door Open device action retry 3 times)	Assy cover door switch defect. Assy cover door wax motor defect. Loose wire connectors. PCB main defect.
FC	Top Fan motor Error	Blower fan motor speed is measured less than 3000 RPM. (Fan motor action retry 6 times)	Blower fan motor defect. Loose wire connectors. PCB main defect.

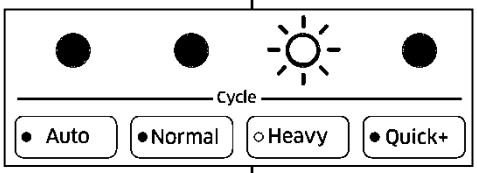
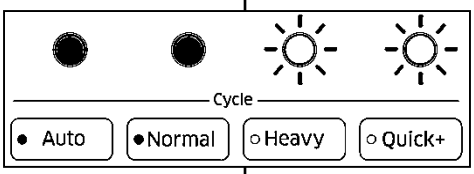
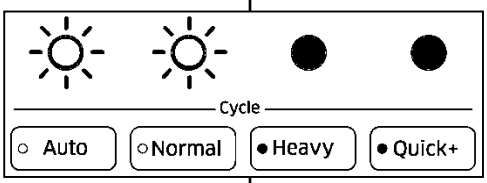
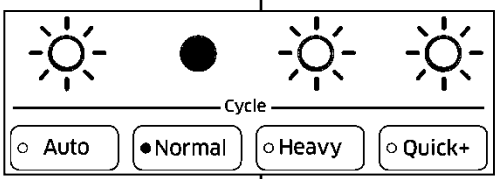
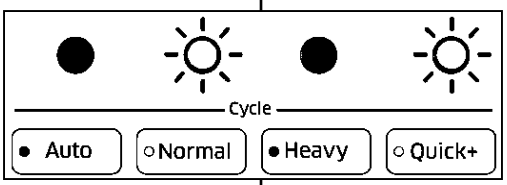
Error Code List for DW80M2020**

Flashing LED	Meaning	Occurring Condition	Failure Components
 **Normal LED Flashing**	**Leakage Error**	When leakage sensor detects 3 V or lower for 3 seconds. Once there is enough water accumulated around the leakage sensor, “Leak Error” shows right away regardless of power been on or off.	• Hose connection leaking. • Sump Assembly leaking. • Tub assembly leaking. • Drain Pump assembly leaking. • Main PCB defect.
 **Express 60 + Heavy LED Flashing**	**Heater Error**	The temperature change is 4℃ or less within the first 10 minutes after the heating starts	•Heater defect •Heater Relay defect •Heater terminal not connected •Main Wire-Harness defect •Main PCB defect •No water inside
Normal + Heavy + Express 60 LED Flashing	**Temperature sensor Error Thermistor Shorted**	When 80℃ or higher is detected during operation for more than 3 seconds.	• Heater Relay defect • Thermistor defect • Main PCB defect
 **Normal + Heavy LED Flashing**	**Temperature sensor Error Thermistor Open**	Abnormal Voltage signal from temperature sensor (4.5V and higher or 0.2V and lower) is detected for over 3 seconds.	• Thermistor not connected • Thermistor Defect • Main PCB defect

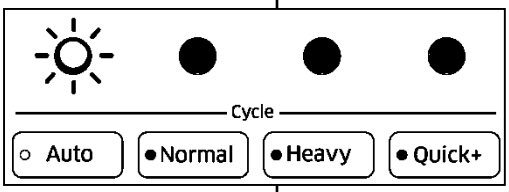
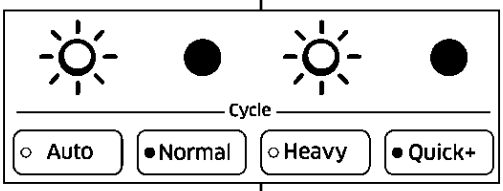
Error Code List for DW80M2020**

Flashing LED	Meaning	Occurring Condition	Failure Components
 **Express 60 LED Flashing**	**Water Supply Error (Water Level)**	1. When the non-water switch doesn't work in wash step at Pre-wash phase. 2. When the water supply is not completed 60 minutes after it starts.	• Water Pressure is too low (lower than 20 PSI). • Water supply Valve defect • Flow Meter defect. • Water supply Valve terminal not connected. • Water supply Valve clogged. • Main PCB defect or no feedback to PCB.
 **Express 60 + Auto LED Flashing**	**Button Error**	When the button is held for over 30 seconds or jammed.	• Sub PCB defect • Main PCB defect
 **Auto + Heavy LED Flashing**	**Over flow Error**	When the high-water float switch is on for 5 seconds in 5 times. - When the high water switch is on for 120 seconds.	• Water supply Valve is not closing properly. • The high-water float switch is broken. • Main PCB defect. • Drain pump defect.. • Drain hose/pump Clogged. • Drain pump wire not connected.
 **Auto + Normal + Express 60 LED Flashing**	**Function Error**	Communication error between control panel and PCB main.	• Functional error. Turn off and restart. • Loose wire connectors. • Control panel defect • Main PCB defect.

Error Code List for DW80J3020, DW80K2021 series

Flashing LED	Meaning	Occurring Condition	Failure Components
 **Heavy LED Flashing**	**Leakage Error**	When leakage sensor detects 3 V or lower for 3 seconds. Once there is enough water accumulated around the leakage sensor, “Leak Error” shows right away regardless of power been on or off.	• Hose connection leaking. • Sump Assembly leaking. • Tub assembly leaking. • Drain Pump assembly leaking. • Main PCB defect.
 **Quick + Heavy LED Flashing**	**Heater Error**	The temperature change is 4℃ or less within the first 10 minutes after the heating starts	•Heater defect •Heater Relay defect •Heater terminal not connected •Main Wire-Harness defect •Main PCB defect •No water inside
 **Normal + Auto LED Flashing**	**High Temperature Error**	When 80℃ or higher is detected during operation for more than 3 seconds.	• Heater Relay defect • Thermistor defect • Main PCB defect
 **Quick + Heavy + Auto LED Flashing**	**Temperature sensor Error**	Abnormal Voltage signal from temperature sensor (4.5V and higher or 0.2V and lower) is detected for over 3 seconds.	• Thermistor not connected • Thermistor Defect • Main PCB defect
 **Normal + Quick LED Flashing**	**Button Error**	When the button is held for over 10 seconds or jammed.	• Sub PCB defect • Main PCB defect

Error Code List for DW80J3020, DW80K2021 series

Flashing LED	Meaning	Occurring Condition	Failure Components
 **Auto LED Flashing**	**Water Supply Error (Level)**	1. When the flow meter pulse is 5 or less within 13 seconds after the water supply starts. 2. When the water supply is not completed 60 minutes after it starts.	• Water Pressure is too low (lower than 20 PSI). • Water supply Valve defect • Flow Meter defect. • Water supply Valve terminal not connected. • Water supply Valve clogged. • Main PCB defect or no feedback to PCB.
 **Auto + Heavy LED Flashing**	**Over flow Error**	When high limit sensor detects 3 V or lower for 5 seconds.	• Water supply Valve is not closing properly. • Flow Meter defect. • Main PCB defect. • Uneven water level occurred inside sump. • Drain pump defect.. • Drain hose/pump Clogged. • Drain pump wire not connected.

Components Resistance Value Table	
Component	Resistance
coil in Water Valve	990Ω ± 10%
Drain Pump coil	. 88Ω ±7%
Main Motor Coil	5.8Ω ±10%
Heater	12.14 ~ 14.16Ω
Motor vane	1.625 ~ 1.796kΩ
Fan Motor coil	50.4 ~ 61.6 Ω
Synchronous Motor	2.6kΩ
Inlet Valve	1.2 kΩ
Drain Pump coil	25Ω
Main Motor black wire ~ white wire	15 Ω
Main Motor black wire ~ Blue wire	21 Ω
Dispenser	2.3 kΩ
Out Dry Fan Motor coil	150 Ω
Twin Dry Fan Motor coil	80 Ω
Single Speed Motor	16.5Ω

Thermistor Resistance Value	
Temp (℃)	Resistance (KΩ)
5	125.814
10	98.360
15	77.480
20	61.477
25	49.120
30	39.510
35	31.985
40	26.053
45	21.347
50	17.590
55	14.573
60	12.136
65	10.157
70	8.541

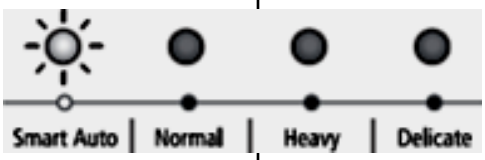
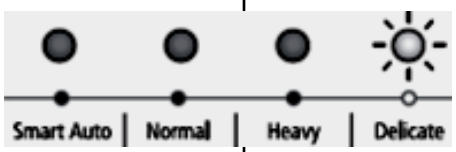
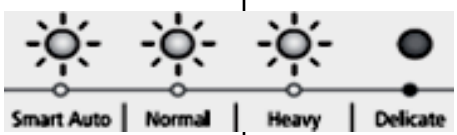
Error Code List for DW80F800 (Rev 00 / 01)

Code	Meaning	Occurring Condition	Failure Components
4E	Water Supply Error (Level)	1. When the flow meter pulse is 5 or less within 5 ~ 20 seconds after the water supply starts. 2. When the water supply is not completed 5 ~ 6 minutes after it starts.	• Water Pressure is too low (lower than 20 PSI). • Water supply Valve defect • Flow Meter defect. • Water supply Valve terminal not connected. • Water supply Valve clogged. • Main PCB defect or no feedback to PCB.
3E	Water Supply Error (Temperature)	When 80℃ or higher water temperature is detected during water supply.	• ECS Sensor Defect (Rev 00) • Thermistor Defect (Rev 01) • Water supply temperature is too high (80℃ or above). • Main PCB defect.
5E	Drain Error	Drain finish or no water (Switch Open) status is not detected 3 minutes after the drain pump starts. **(No 5E code for Rev 01)**	• Drain pump defect. • ECS Sensor defect. • Drain hose/pump Clogged. • Drain pump wire not connected. • Main PCB defect or no feedback to PCB.
oE	Over flow Error	When high limit sensor detects 3.5V or lower for 3 ~ 5 seconds.	• Water supply Valve is not closing properly. • Flow Meter defect. • Main PCB defect. • Uneven water level occurred inside sump.
9E	Low water level Error	Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses. **(No 5E code for Rev 01)**	• ECS Sensor Defect. • Assy Sensor ECS terminal not connected. • Main PCB defect or no feedback to PCB
LE	Leakage Error	When leakage sensor detects 4.5V or lower for 1~3 second. Once there is enough water accumulated around the leakage sensor, “LE” shows right away regardless of power been on or off.	• Hose connection leaking. • Sump Assembly leaking. • Tub assembly leaking. • Drain Pump assembly leaking. • Main PCB defect.

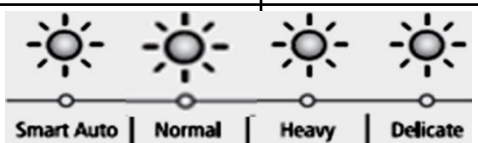
Error Code List for DW80F800 (Rev 00 / 01)

Code	Meaning	Occurring Condition	Failure Components
HE	Heater Error	The temperature change is 4℃ or less within the first 10 minutes after the heating starts	• Heater defect • Heater Relay defect • Heater terminal not connected • Main Wire-Harness defect • Assy Sensor ECS Defect. • Main PCB defect • No water inside
1E	High Temperature Error	When 80℃ or higher is detected during operation for more than 3 seconds.	• Heater Relay defect • ECS Sensor Defect (Rev 00) • Thermistor Defect (Rev 01) • Main PCB defect
tE	Temperature sensor Error	Abnormal Voltage signal from temperature sensor (4.5V and higher or 0.2V and lower) is detected for over 3 seconds.	• Temp Sensor not connected • ECS Sensor Defect (Rev 00) • Thermistor Defect (Rev 01) • Main PCB defect
PE	Half load function Error	Half load function ready (Switch Close) status is not detected 30 seconds ~ 2 minutes after the Distributor motor starts	• Distributor motor defect • Half load switch terminal not connected • Main PCB defect • The cam position is incorrect.
dE	Door open warning	When door is open in test mode only.	• Door is not closed • Door lock switch defect • Main PCB defect
cE	Function Error	Communication error between control panel and PCB main.	• Functional error. Turn off and restart. • Loose wire connectors. • Display board defect. • Main PCB defect.
bE	Button Error	When the button is held for over 10 ~ 30 seconds or jammed.	• Sub PCB defect. • Main PCB defect.

Error Code List for DW80F600 (Rev 00 / 01)

Flashing LED	Meaning	Occurring Condition	Failure Components
 **Smart Auto LED Flashing**	**Water Supply Error (Level)**	1. When the flow meter pulse is 5 or less within 5 ~13 seconds after the water supply starts. 2. When the water supply is not completed 6 minutes after it starts.	• Water Pressure is too low (lower than 20 PSI). • Water supply Valve defect • Flow Meter defect. • Water supply Valve terminal not connected. • Water supply Valve clogged. • Main PCB defect or no feedback to PCB.
Smart Auto +Delicate + Normal LED Flashing	**Water Supply Error (Temperature)**	When 80℃ or higher water temperature is detected during water supply.	• ECS Sensor Defect (Rev 00) • Thermistor Defect (Rev 01). • Water supply temperature is too high (80℃ or above). • Main PCB defect.
 **Delicate LED Flashing**	**Drain Error**	Drain finish or no water (Switch Open) status is not detected 3 minutes after the drain pump starts. **(No drain error code for Rev 01)**	• Drain pump defect. • Water Level Sensor defect. • Sensor Hose Clogged. • Drain hose/pump Clogged. • Drain pump wire not connected. • Main PCB defect or no feedback to PCB.
Smart Auto + Heavy LED Flashing	**Over flow Error**	When high limit sensor detects 3.5V or lower for 3 seconds.	• Water supply Valve is not closing properly. • Flow Meter defect. • Main PCB defect. • Uneven water level occurred inside sump.
 **Normal + Heavy + Smart Auto LED Flashing**	**Low water level Error**	Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses. **(No low water level error code for Rev 01)**	• Assy Sensor ECS Defect. • Assy Sensor ECS terminal not connected. • Main PCB defect or no feedback to PCB
Smart Auto +Delicate LED Flashing	**Door open Error**	Door been opened during the test.	Door been opened while the test is on progressing. Close the door.

Error Code List for DW80F600 (Rev 00 / 01)

Flashing LED	Meaning	Occurring Condition	Failure Components
Heavy LED Flashing	**Leakage Error**	When leakage sensor detects 4.5V or lower for 1 second. Once there is enough water accumulated around the leakage sensor, “LE” shows right away regardless of power been on or off.	• Hose connection leaking. • Sump Assembly leaking. • Tub assembly leaking. • Drain Pump assembly leaking. • Main PCB defect.
Delicate + Heavy LED Flashing	**Heater Error**	The temperature change is 4℃ or less within the first 10 minutes after the heating starts	• Heater defect • Heater terminal not connected • Wire-Harness defect • Assy Sensor ECS Defect. • Main PCB defect • No water inside
Normal + Smart Auto LED Flashing	**High Temperature Error**	When 80℃ or higher is detected during operation for more than 3 seconds.	• Heater Relay defect • ECS Defect (Rev 00) • Thermistor Defect (Rev 01) • Main PCB defect
Delicate + Heavy + Smart Auto LED Flashing	**Temperature sensor Error**	Abnormal Voltage signal from temperature sensor (4.5V and higher or 0.2V and lower) is detected for over 3 seconds.	• ECS Sensor Defect(Rev 00) • Thermistor Defect (Rev 01) • Main PCB defect
Normal + Delicate LED Flashing	**Button Error**	When the button is held for over 30 seconds or jammed.	• Sub PCB defect • Main PCB defect
 **Normal + Heavy + Delicate + Smart Auto LED Flashing**	**Function Error**	Communication error between control panel and PCB main.	• Functional error. Turn off and restart. • Loose wire connectors. • Control panel defect • Main PCB defect

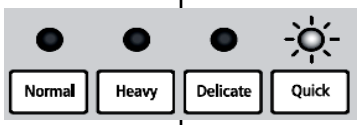
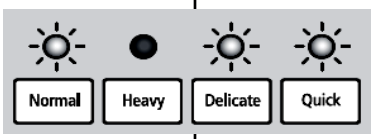
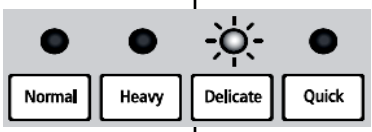
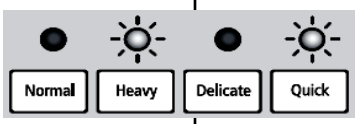
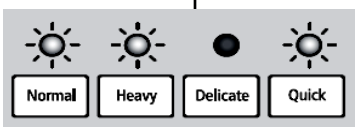
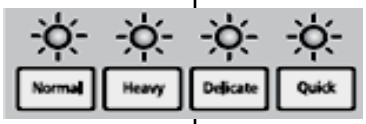
Error Code List for DMR57/77/78, DMT350/610/800

Code	Meaning	Occurring Condition	Failure Components
4E	Water Supply Error (Level)	1. When the flow meter pulse is 5 or less within 5 ~ 20 seconds after the water supply starts. 2. When the water supply is not completed 5 ~ 6 minutes after it starts.	• Water Pressure is too low (lower than 20 PSI). • Water supply Valve defect • Flow Meter defect. • Water supply Valve terminal not connected. • Water supply Valve clogged. • Main PCB defect or no feedback to PCB.
4E1 **3E**	Water Supply Error (Temperature)	When 80℃ or higher water temperature is detected during water supply.	• Thermistor Defect. • Water supply temperature is too high (80℃ or above). • Main PCB defect.
5E	Drain Error	Drain finish or no water (Switch Open) status is not detected 3 minutes after the drain pump starts.	• Drain pump defect. • Water Level Sensor defect. • Water Level Sensor Hose Clogged. • Drain hose/pump Clogged. • Drain pump wire not connected. • Main PCB defect or no feedback to PCB.
oE	Over flow Error	When high limit sensor detects 3.5V or lower for 3 ~ 5 seconds.	• Water supply Valve is not closing properly. • Flow Meter defect. • Main PCB defect. • Uneven water level occurred inside sump.
9E	Low water level Error	Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses.	• Water Level Sensor defect. • Water Level Sensor Hose Clogged. • Water Level Sensor terminal not connected. • Main PCB defect or no feedback to PCB
LE	Leakage Error	When leakage sensor detects 4.5V or lower for 1~3 second. Once there is enough water accumulated around the leakage sensor, “LE” shows right away regardless of power been on or off.	• Hose connection leaking. • Sump Assembly leaking. • Tub assembly leaking. • Drain Pump assembly leaking. • Main PCB defect.

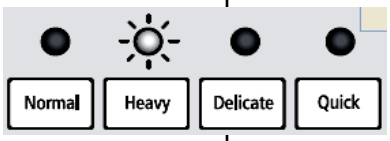
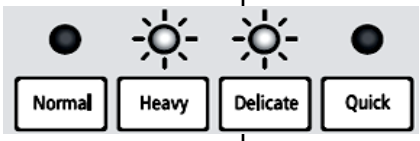
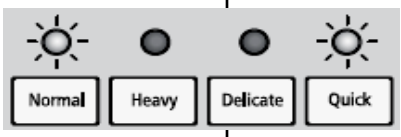
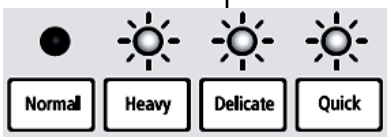
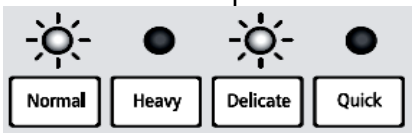
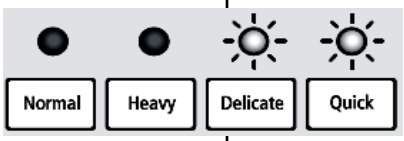
Error Code List for DMR57/77/78, DMT350/610/800

Code	Meaning	Occurring Condition	Failure Components
HE	Heater Error	The temperature change is 4℃ or less within the first 10 minutes after the heating starts	• Heater defect • Heater Relay defect • Heater terminal not connected • Main Wire-Harness defect • Main PCB defect • No water inside
HE1 **1E**	High Temperature Error	When 80℃ or higher is detected during operation for more than 3 seconds.	• Heater Relay defect • Thermistor defect • Main PCB defect
tE1 **tE**	Temperature sensor Error	Abnormal Voltage signal from temperature sensor (4.5V and higher or 0.2V and lower) is detected for over 3 seconds.	• Thermistor not connected • Thermistor Defect • Main PCB defect
PE	Half load function Error	Half load function ready (Switch Close) status is not detected 30 seconds ~ 2 minutes after the Distributor motor starts	• Distributor motor defect • Half load switch terminal not connected • Main PCB defect • The cam position is incorrect.
dE	Door open warning	When door is open in test mode only.	• Door is not closed • Door lock switch defect • Main PCB defect
cE	Function Error	Communication error between control panel and PCB main.	• Functional error. Turn off and restart. • Loose wire connectors. • Display board defect. • Main PCB defect.
bE **bE1**	Button Error	When the button is held for over 10 ~ 30 seconds or jammed.	• Sub PCB defect. • Main PCB defect.

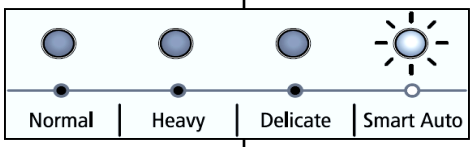
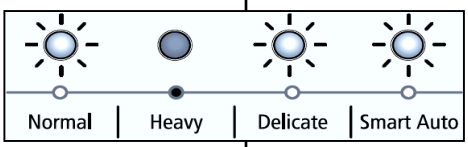
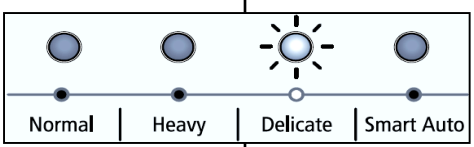
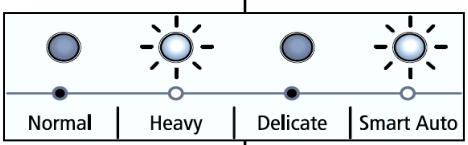
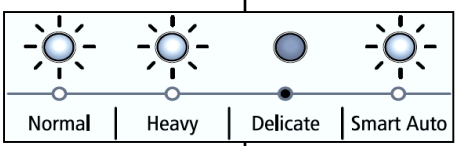
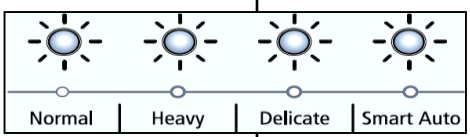
Error Code List for DMT210/300

Flashing LED	Meaning	Occurring Condition	Failure Components
 **Quick LED Flashing**	**Water Supply Error (Level)**	1. When the flow meter pulse is 5 or less within 5 ~13 seconds after the water supply starts. 2. When the water supply is not completed 6 minutes after it starts.	• Water Pressure is too low (lower than 20 PSI). • Water supply Valve defect • Flow Meter defect. • Water supply Valve terminal not connected. • Water supply Valve clogged. • Main PCB defect or no feedback to PCB.
 **Normal + Delicate + Quick LED Flashing**	**Water Supply Error (Temperature)**	When 80℃ or higher water temperature is detected during water supply.	• Thermistor Defect. • Water supply temperature is too high (80℃ or above). • Main PCB defect.
 **Delicate LED Flashing**	**Drain Error**	Drain finish or no water (Switch Open) status is not detected 3 minutes after the drain pump starts.	• Drain pump defect. • Water Level Sensor defect. • Sensor Hose Clogged. • Drain hose/pump Clogged. • Drain pump wire not connected. • Main PCB defect or no feedback to PCB.
 **Heavy + Quick LED Flashing**	**Over flow Error**	When high limit sensor detects 3.5V or lower for 3 seconds.	• Water supply Valve is not closing properly. • Flow Meter defect. • Main PCB defect. • Uneven water level occurred inside sump.
 **Normal + Heavy + Quick LED Flashing**	**Low water level Error**	Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses.	• Water Level Sensor defect. • Water Level Sensor Hose Clogged. • Water Level Sensor terminal not connected. • Main PCB defect or no feedback to PCB
 **Normal + Heavy + Delicate + Quick LED Flashing**	**Function Error**	Communication error between control panel and PCB main.	• Functional error. Turn off and restart. • Loose wire connectors. • Control panel defect • Main PCB defect

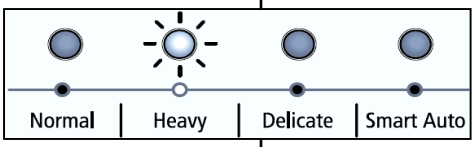
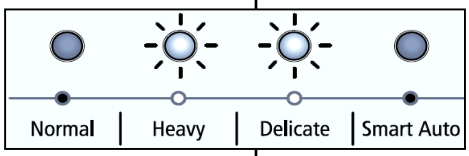
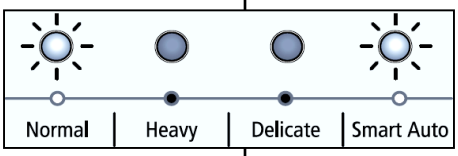
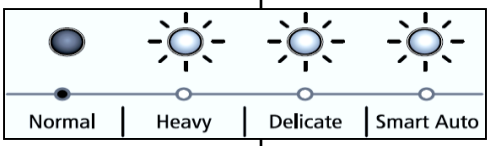
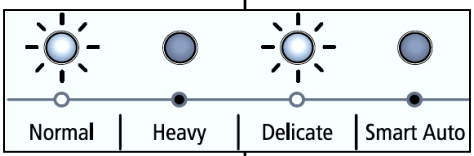
Error Code List for DMT210/300

Flashing LED	Meaning	Occurring Condition	Failure Components
 **Heavy LED Flashing**	**Leakage Error**	When leakage sensor detects 4.5V or lower for 1 second. Once there is enough water accumulated around the leakage sensor, “LE” shows right away regardless of power been on or off.	• Hose connection leaking. • Sump Assembly leaking. • Tub assembly leaking. • Drain Pump assembly leaking. • Main PCB defect.
 **Delicate + Heavy LED Flashing**	**Heater Error**	The temperature change is 4℃ or less within the first 10 minutes after the heating starts	• Heater defect • Heater Relay defect • Heater is not connected • Main Wire-Harness defect • Main PCB defect • No water inside
 **Normal + Quick LED Flashing**	**High Temp Error**	When 80℃ or higher is detected during operation for more than 3 seconds.	• Heater Relay defect • Thermistor defect • Main PCB defect
 **Delicate + Heavy + Quick LED Flashing**	**Temp sensor Error**	Abnormal Voltage signal from temperature sensor (4.5V and higher or 0.2V and lower) is detected for over 3 seconds.	• Thermistor not connected • Thermistor Defect • Main PCB defect
 **Normal + Delicate LED Flashing**	**Button Error**	When the button is held for over 30 seconds or jammed.	• Sub PCB defect. • Main PCB defect
 **Delicate + Quick LED Flashing**	**Door Open Error**	When door is open during washing operation	• Door is not closed • Door lock switch defect • Main PCB defect

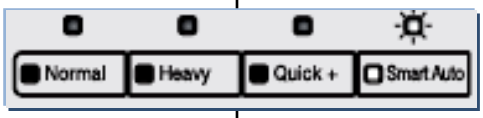
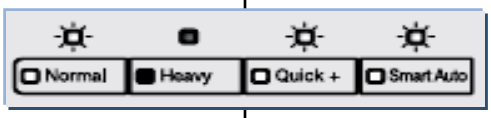
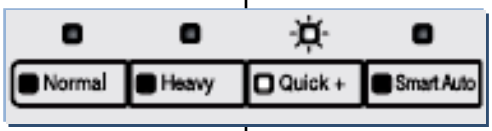
Error Code List for DMT400

Flashing LED	Meaning	Occurring Condition	Failure Components
 **Smart Auto LED Flashing**	**Water Supply Error (Level)**	1. When the flow meter pulse is 5 or less within 5 ~13 seconds after the water supply starts. 2. When the water supply is not completed 6 minutes after it starts.	• Water Pressure is too low (lower than 20 PSI). • Water supply Valve defect • Flow Meter defect. • Water supply Valve terminal not connected. • Water supply Valve clogged. • Main PCB defect or no feedback to PCB.
 **Smart Auto +Delicate + Normal LED Flashing**	**Water Supply Error (Temperature)**	When 80℃ or higher water temperature is detected during water supply.	• Thermistor Defect. • Water supply temperature is too high (80℃ or above). • Main PCB defect.
 **Delicate LED Flashing**	**Drain Error**	Drain finish or no water (Switch Open) status is not detected 3 minutes after the drain pump starts.	• Drain pump defect. • Water Level Sensor defect. • Sensor Hose Clogged. • Drain hose/pump Clogged. • Drain pump wire not connected. • Main PCB defect or no feedback to PCB.
 **Smart Auto + Heavy LED Flashing**	**Over flow Error**	When high limit sensor detects 3.5V or lower for 3 seconds.	• Water supply Valve is not closing properly. • Flow Meter defect. • Main PCB defect. • Uneven water level occurred inside sump.
 **Normal + Heavy + Smart Auto LED Flashing**	**Low water level Error**	Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses.	• Water Level Sensor defect. • Water Level Sensor Hose Clogged. • Water Level Sensor terminal not connected. • Main PCB defect or no feedback to PCB
 **Normal + Heavy + Delicate + Smart Auto LED Flashing**	**Function Error**	Communication error between control panel and PCB main.	• Functional error. Turn off and restart. • Loose wire connectors. • Control panel defect • Main PCB defect

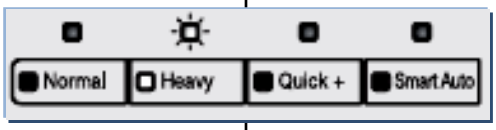
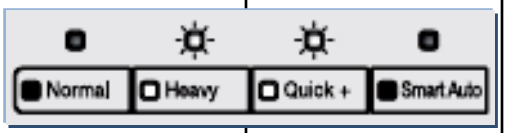
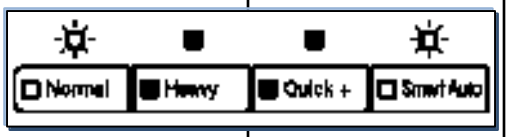
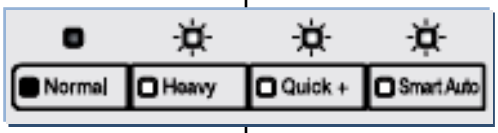
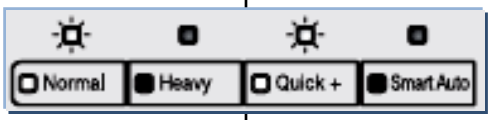
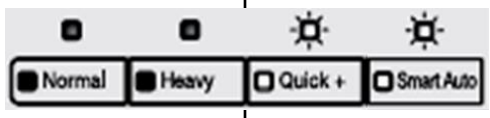
Error Code List for DMT400

Flashing LED	Meaning	Occurring Condition	Failure Components
 **Heavy LED Flashing**	**Leakage Error**	When leakage sensor detects 4.5V or lower for 1 second. Once there is enough water accumulated around the leakage sensor, “LE” shows right away regardless of power been on or off.	• Hose connection leaking. • Sump Assembly leaking. • Tub assembly leaking. • Drain Pump assembly leaking. • Main PCB defect.
 **Delicate + Heavy LED Flashing**	**Heater Error**	The temperature change is 4℃ or less within the first 10 minutes after the heating starts	•Heater defect •Heater Relay defect •Heater terminal not connected •Main Wire-Harness defect •Main PCB defect •No water inside
 **Normal + Smart Auto LED Flashing**	**High Temperature Error**	When 80℃ or higher is detected during operation for more than 3 seconds.	• Heater Relay defect • Thermistor defect • Main PCB defect
 **Delicate + Heavy + Smart Auto LED Flashing**	**Temperature sensor Error**	Abnormal Voltage signal from temperature sensor (4.5V and higher or 0.2V and lower) is detected for over 3 seconds.	• Thermistor not connected • Thermistor Defect • Main PCB defect
 **Normal + Delicate LED Flashing**	**Button Error**	When the button is held for over 30 seconds or jammed.	• Sub PCB defect • Main PCB defect

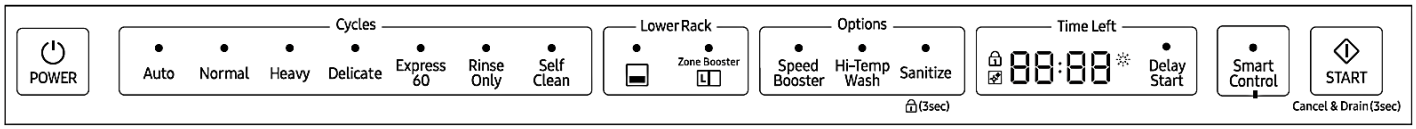
Error Code List for DW7933

Code	Meaning	Occurring Condition	Failure Components
 **Smart Auto LED Flashing**	**Water Supply Error (Level)**	1. When the flow meter pulse is 5 or less within 5 ~13 seconds after the water supply starts. 2. When the water supply is not completed 6 minutes after it starts.	• Water Pressure is too low (lower than 20 PSI). • Water supply Valve defect • Flow Meter defect. • Water supply Valve terminal not connected. • Water supply Valve clogged. • Main PCB defect or no feedback to PCB.
 **Smart Auto +Quick + Normal LED Flashing**	**Water Supply Error (Temperature)**	When 80℃ or higher water temperature is detected during water supply.	• Thermistor Defect. • Water supply temperature is too high (80℃ or above). • Main PCB defect.
 **Quick LED Flashing**	**Drain Error**	Drain finish or no water (Switch Open) status is not detected 3 minutes after the drain pump starts.	• Drain pump defect. • Water Level Sensor defect. • Sensor Hose Clogged. • Drain hose/pump Clogged. • Drain pump wire not connected. • Main PCB defect or no feedback to PCB.
Smart Auto + Heavy LED Flashing	**Over flow Error**	When high limit sensor detects 3.5V or lower for 3 seconds.	• Water supply Valve is not closing properly. • Flow Meter defect. • Main PCB defect. • Uneven water level occurred inside sump.
Normal + Heavy + Smart Auto Flashing	**Low water level Error**	Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses.	• Water Level Sensor defect. • Water Level Sensor Hose Clogged. • Water Level Sensor terminal not connected. • Main PCB defect or no feedback to PCB

Error Code List for DW7933

Code	Meaning	Occurring Condition	Failure Components
 **Heavy LED Flashing**	**Leakage Error**	When leakage sensor detects 4.5V or lower for 1 second. Once there is enough water accumulated around the leakage sensor, “LE” shows right away regardless of power been on or off.	• Hose connection leaking. • Sump Assembly leaking. • Tub assembly leaking. • Drain Pump assembly leaking. • Main PCB defect.
 **Quick + Heavy LED Flashing**	**Heater Error**	The temperature change is 4℃ or less within the first 10 minutes after the heating starts	•Heater defect •Heater Relay defect •Heater terminal not connected •Main Wire-Harness defect •Main PCB defect •No water inside
 **Normal + Smart Auto LED Flashing**	**High Temperature Error**	When 80℃ or higher is detected during operation for more than 3 seconds.	• Heater Relay defect • Thermistor defect • Main PCB defect
 **Delicate + Heavy + Smart Auto LED Flashing**	**Temperature sensor Error**	Abnormal Voltage signal from temperature sensor (4.5V and higher or 0.2V and lower) is detected for over 3 seconds.	• Thermistor not connected • Thermistor Defect • Main PCB defect
 **Normal + Quick LED Flashing**	**Button Error**	When the button is held for over 30 seconds or jammed.	• Sub PCB defect. • Main PCB defect.
 **Smart Auto + Quick LED Flashing**	**Door Open Error**	When door is open during washing operation	• Door is not closed • Door lock switch defect • Main PCB defect

Test Mode for DW80M3021* / 9550* / 9600*



➢ How to enter the test mode/Smart Install Program:

1. Press the “Delay Start” Key to set the delay start time to 17H after power on.
2. Hold down the “Hi-Temp Wash” Key for at least 7 seconds until “AS” is displayed.

After “AS” is displayed, press the “Hi-Temp Wash” Key to enter the Information Display Mode. Each time the “Hi-Temp Wash” Key is pressed, it changes through n1 -> n2 -> n3 -> n4 -> n5 -> n1 in repeats sequence order.
Pressed the “Auto” key to exist the information display mode.

Mode	Note
n1	Version Display Press the following key to see Version Display: Delicate: Model Option Display. Express 60: Main PBA Version Rinse Key: WiFi Module Version Display ((For WiFi models only) “---” will be displayed if there is no version information received.
n2	Recall Error Codes Press the Normal key to access the last 7 error codes. Each time the Normal key is pressed, the display will change from C00, C10,…C60. The display will alternate between the sequence number and the error code itself. Ex. (C00-->LC). While viewing an error code, press the Heavy key to view the conditions that triggered the error code. Press and hold the Start key for 7 seconds to clear the error codes
n3	Smart Install Auto Mode Result Display It determines based on the data saved in EEPROM. "OK"= Smart Auto Install Mode was successfully completed "nG"= Smart Auto Install Mode was NOT successfully completed
n4	Operation Cycle Display Counts the number of cycles that the dishwasher has completed. The dishwasher will not count a cycle if the cycle has been cancelled. The maximum value is 9999.
n5	Setting Dry Increase Option Display Turn Sanitize option on or off by default. To increase the drying performance, turn the “Sanitize” option on by default. Press Sanitize to change setting 1) If Sanitize option is set to On by default, it indicates as "d1”. 2) If Sanitize option is not set to On by default, it indicates as "d0“.

Test Mode for DW80M3021* / 9550* / 9600*

After “AS” is displayed, press the “Auto” Key to enter the test mode.
This will advance to test 1 and press the “Start” key to begin the test. Use the “Auto” Key to advance through each step, t1 → t2 → t3 → t4 → t5 → t6 → t7…Repeats sequence order.

Mode	Note
t1	Drain and Water Supply Check. Turns on the drain pump for the following sequence: 14 seconds on--> 2 seconds off -->14 seconds on --> 5 seconds off. If the dishwasher does not drain and drain error code will occur. 4.5L of water is supplied. If water is not supplied after a maximum of 5 minutes, water supply error will occur.
t2	Wash Cycle Check DC Motor: Default is at 2400 RPM. AC Motor: Default is at low power setting. Press the Normal key to change the RPM (1201-3500). Press the Normal key to change between low and high speed. Press the Heavy key to change the distribution of water through the nozzles. Each time the Heavy key is pressed, the display will change from n1, n2, n3... At the start of this check, the dishwasher may drain and refill with water to calibrate air pressure in the tub. This is normal
t3	Wash Cycle and Heater Check Synchronous (distributor) motor will reset to default position, the main motor will operate at 2400 RPM for BLDC motor and low power setting for AC motor. After 10 seconds, the heater will turn on. The heater will automatically turn off after 10 minutes of operation or if the water temperature exceeds 73 degrees Celsius. During operation, the water temperature and the current step number will alternate in the display.
t4	Wash Cycle and Dispenser Check . Synchronous (distributor) motor will operate by default position, the main motor will operate at 2400 RPM for BLDC motor and low power setting for AC motor. The dispenser will be opened at around the 130 seconds point.
t5	Blower Fan Check . DC fan / Dry Actuator (applied model) will start to operate at 30 seconds point.
t6	Drain Check Turns on the drain pump for the following sequence: 14 seconds on--> 2 seconds off -->14 seconds on --> 5 seconds off.
t7	Auto Door Open Check Operates the auto door open actuator at around 3 minutes and 30 seconds point. (door open) If the door does not open, a dC3 error will occur.

Auto Test Mode for DW80M2020**

➢ Auto Test Mode can be entered by following two ways:

1. Disconnect the power supply from the dishwasher and then reconnect it back. Within 30 seconds after the power reconnection, **open the door** and press the "**power**" button and the "**start**" button simultaneously.

2. **Open the door**, hold down the "**power**", "**Auto**", and "**Express**" buttons simultaneously.

All LEDs light up for 2 seconds & sends out a Beep sound when it enters into the Test Mode.
Displays the PCB software version in Binary Code by using "Express", "Heavy", "Normal", and "Auto" LEDs.

After the PCB software version is displayed and the door is closed, unit will start to run the Auto Test program automatically.

When the test program is running, the cycle LED indicators will recycle in below pattern:
"Express" -> "Heavy" -> "Normal" -> "Auto" and repeat.

During the Auto test Mode, all buttons except the Power button are deactivated.

CYCLE CHART for DW80M2020**

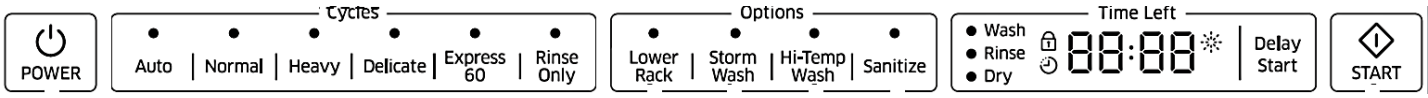
Cycle	Pre-wash1	Pre-wash2	Main wash	Rinse1	Rinse2	Rinse3	Last Rinse [Sanitize]	Dry	Water [gal(l)]	CycleTime (min)	Time with HI-temp(min)	Time with Sanitize(min)
Auto	●	○	● 118-135 °F (48-57 °C)	○	○	●	● 122-136°F (50-58 °C)	●	3-6 (11.4-22.5)	110-135	130	
Normal	●	○	● 108-118 °F (42-48 °C)	○	○	●	● 122-136°F (50-58 °C) [156 °F (69 °C)]	●	3-6 (11.4-22.5)	105-140	130	135-175
Heavy	●	●	● 118°F (48 °C)	●	●	●	● 136 °F (58 °C) [156 °F (69 °C)]	●	6 (22.5)	140	150	170
Express	●	○	● 104 °F (40 °C)	●	●	○	● 122 °F (50 °C)	●	4 (15.1)	60		

(●: Basic,○: Optional step)

Auto Test Mode for DW80M2020**

Mode	Note
T1	STEP 01: Exhaust fan & Water inlet valve test. 1) Turn on the fan for 10 seconds and then turn off. 2) Turn on the water inlet valve for 54 seconds and then turn off. 3) If the Turbidity is detected OK, all Delay Start LED indicators (3h indicator, 6h indicator and 9h indicator) will all be on.
T2	STEP 02: Wash pump motor & Heater test 1) Turn on the wash pump motor to start the wash performance. 2) While the main motor is operating, heater is turned on 10 seconds later to heat the water. A beeping sound will be sent out when the temperature rises by 3°C - 5°C. 3) Heater will be shut off when the water temperature is over 57°C and all cycle LED indicators will be on. 4) If the water temperature does not reach 57°C after 90min, heater error occurs. (The Express and Heavy LEDs blinking). ● Press Start/Cancel button to advance the test after the temperature reached 57°C.
T3	STEP 03: Wash pump motor & soap dispenser test. 1) Turn on wash pump motor for 10 seconds then turn off. 2) Soap dispenser will be opened and the wax motor will back to normal position after 45 seconds.
T4	STEP 04: Pause for 30 seconds.
T5	STEP 05: Drain pump test Turn on the drain for 30 seconds then turn off.
T6	STEP 06: Test over. 1) A beeping sound will be sent out when the test is over. 2) The PCB main and the PCB Sub software versions will be displayed in Binary Code by using "Express", “Heavy”, “Normal”, and “Auto” LEDs.

Test Mode for DW80K5050/7050 Series



➢ How to enter the test mode/Smart Install Program:

1. Press the “Delay Start” Key to set the delay start time to 17H after power on.
2. Hold down the “Hi-Temp Wash” Key for at least 7 seconds until “AS” is displayed.

After “AS” is displayed, press the “Hi-Temp Wash” Key to enter the Information Display Mode. Each time the “Hi-Temp Wash” Key is pressed, it changes through n1 -> n2 -> n3 -> n4 -> n5 -> n1 in repeats sequence order.
Pressed the “Auto” key to exist the information display mode.

Mode	Note
n1	Version Display Press the following key to see Version Display: 1. Normal Key: Sub PBA Version. 2. Heavy Key: Sub PBA Touch IC Version. 3. Delicate: Model Option Display. 4. Express 60: Main PBA Version
n2	Recall Error Codes Press the Normal key to access the last 7 error codes. Each time the Normal key is pressed, the display will change from C00, C10,…C60. The display will alternate between the sequence number and the error code itself. Ex. (C00-->LC). The oldest code will be overwritten so that the most recent 7 error codes are stored. While viewing an error code, press the Heavy key to view the conditions that triggered the error code. Press and hold the Start key for 7 seconds to clear the error codes
n3	Smart Install Auto Mode Result Display It determines based on the data saved in EEPROM. "OK"= Smart Auto Install Mode was successfully completed "nG"= Smart Auto Install Mode was NOT successfully completed
n4	Operation Cycle Display Counts the number of cycles that the dishwasher has completed. The dishwasher will not count a cycle if the cycle has been cancelled. The maximum value is 9999
n5	Setting Dry Increase Option Display Turn Sanitize option on or off by default. To increase the drying performance, turn the “Sanitize” option on by default. Press Sanitize to change setting 1) If Sanitize option is set to On by default, it indicates as "d1”. 2) If Sanitize option is not set to On by default, it indicates as "d0“.

Test Mode for DW80K5050/7050 Series

After “AS” is displayed, press the “Auto” Key to enter the test mode.
This will advance to test 1 and press the “Start” key to begin the test. Use the “Auto” Key to advance through each step, t1 → t2 → t3 → t4 → t5 → t6 → t7…Repeats sequence order.

Mode	Note
t1	Drain and Water Supply Check. Turns on the drain pump for the following sequence: 14 seconds on--> 2 seconds off -->14 seconds on --> 5 seconds off. If the dishwasher does not drain and drain error code will occur. 4.5L of water is supplied. If water is not supplied after a maximum of 5 minutes, water supply error will occur.
t2	Wash Cycle Check DC Motor: Default is at 2400 RPM. AC Motor: Default is at low power setting. Press the Normal key to change the RPM (1201-3500). Press the Normal key to change between low and high speed. Press the Heavy key to change the distribution of water through the nozzles. Each time the Heavy key is pressed, the display will change from n1, n2, n3... At the start of this check, the dishwasher may drain and refill with water to calibrate air pressure in the tub. This is normal
t3	Wash Cycle and Heater Check Synchronous (distributor) motor will reset to default position, the main motor will operate at 2400 RPM for BLDC motor and low for AC motor. After 10 seconds, the heater will turn on. The heater will automatically turn off after 10 minutes of operation or if the water temperature exceeds 73 degrees Celsius. During operation, the water temperature and the current step number will alternate in the display.
t4	Wash Cycle and Dispenser Check . Synchronous (distributor) motor will operate by default position, the main motor will operate at 2400 RPM for BLDC motor and low for AC motor. The dispenser will be opened at around the 130 seconds point.
t5	Blower Fan Check . The DC fan will start to operate at 30 seconds point.
t6	Drain Check Turns on the drain pump for the following sequence: 14 seconds on--> 2 seconds off -->14 seconds on --> 5 seconds off.
t7	Auto Door Open Check Operates the auto door open actuator at around 3 minutes and 30 seconds point. (door open) If the door does not open, a dC3 error will occur.

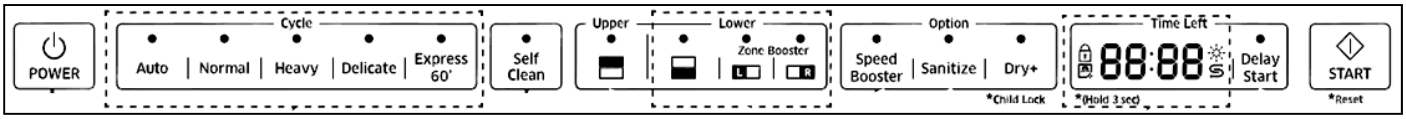
Test Mode for DW80H9930/50/70, DW80J7550 / 9945

➢ How to enter: Press Auto + Delicate + Power Button simultaneously.

1. All LEDs light up for about 1 seconds & sends out a beeping sound.
2. Displays software version (Ex. “Micom-Version. 0143”
3. Press “Auto” key to start the test & also advance the test cycle in Version Display → n1 → n2 → n3 → n4 → n5 → n6 → n7 → n8 → n9 → nA …Repeats sequence order.

Mode	Display	Note
n1	**nA**	Water fill system and Turbidity sensor test. Drain pump is turned on to drain the left over water for 30 seconds. Supply water until it reaches the water level. If there is no water supplied 5 Seconds after the water filling cycle starts, “4E” error code will be displayed. Turbidity sensor test will start after water supply finished. -Displays “tu” and reference voltage data of turbidity sensor alternately. (ex. 3.2V → 32) -If no reference voltage feedback from turbidity sensor 10 seconds after sensing the turbidity, E3 error occurs.
n2	**nb**	First main motor test. (DC motor) Main motor is turned on and run on high speed. (3400RPM) Lower water vane spray system (both left and right) runs for 1 minutes -> Middle and Upper water spray arms run for 1 minutes, repeats sequence order of operation. In case the water line is disconnected, skip test 1. Fill in 4 Liters water manually to do the rest of the tests.
n3	**nC**	Second main motor test. (DC motor) Main motor is turned on and run on low speed. (2600RPM) Lower water vane spray system (both left and right) runs for 1 minutes -> Middle and Upper water spray arms run for 1 minutes, repeats sequence order of operation.
n4	**Nd** **nH ###**	Main Motor, heating system, & soap dispenser test. 10 seconds after main motor is operating at high speed (3400RPM), heater is turned on to heat the water. There will be a number & nd displayed alternately. This number indicates the water temperature which should increase constantly. Heater will be turned on for 3 minutes and then turned off automatically, or if the water temperature reaches 60℃ during 3 minutes heater test, the heater will be turned off. Soap dispenser will be opened at around the 130 seconds point. Lower water vane spray system (both left and right) runs for 3 minutes -> Middle and Upper water spray arms run for 3 minutes, repeats sequence order of operation.

Test Mode for DW80H9930/50/70, DW80J7550 / 9945



Mode	Display	Note
n5	n5 RPM	Distributor synchronous motor test 1 Operates the DC main motor at 2600 RPM after initializing the distributor synchronous motor. Press the Normal key to change the DC main motor speed from 1200 RPM ~ 3400 RPM by 100 RPM incensement order. Press the Heavy key to change position of distributer by the below sequence: (1:Middle spray arm + Upper spray arm→ 2:Lower water vane spray system right side→ 3:Lower water vane spray system (both left and right) → 4:Lower water vane spray system left side)
n6	n6	Distributor synchronous motor test 2 Operates the DC main motor at high speed (3400RPM) after initializing the distributor synchronous motor. Distributor operators by alternating the location between Lower water vane spray system right side and Lower water vane spray system left side at 1 minute intervals.
n7	n7	Drying system test, rinse aid dispenser inspection. Operate Vent Motor and check whether Rinse Aid is refilled. If the Rinse Aid dispenser is empty, Rinse Refill lamp will be ON.
n8	n8	Water level limitation test. Supply water until it reaches the high limit sensor. “oE” code will be displayed.
n9	N9 nP	Drain system test. Drain pump will run for 60 seconds to drain out water. Drain pump operates at 25 seconds on / 2 seconds off repeat pattern during the drain pump test. If drain is not completed by measuring power consumption drainage during the drain test, unit will show 5E error code. If drain is completed within the time frame, nP will be displayed.

Test Mode for DW80H9930/50/70, DW80J7550 / 9945

Data Display Mode.

Hold down the Auto Key and Express key simultaneously for 5 seconds after power on.
Press the “Auto” key to start & also advance the display mode in d0 ->d1->d2->d3->d4->…..
Repeats sequence order.

Item	Display
d00	Version display mode Press the following key to see Version Display 1. Start key, the sub micom version. 2. Sanitize key, the model option. 3. Booster Right key, the Inverter micom version. 4. Dry+ key, the touch IC version.
d01	Operation Cycle Display Counts the number of cycles that the dishwasher has completed. The dishwasher will not count a cycle if the cycle has been cancelled.
d02	Detect water lever when main pump is operating Hi : Normal or not determined. Low : low water lever
d03	Synchronous motor location - Synchronous motor location signal check according to the operation of the motor.
d04	Water temperature Displays water temperature. ex) 24.5℃ -> 254
d05	Flow meter Displays Flow meter pulse.
d06	Turbidity AD Data Displays turbidity AD data.
d07	Overflow Sensor Volt Displays overflow sensor voltage.
d08	Water Leakage Sensor Volt Display water leakage sensor voltage.
d09	Target RPM Displays BLDC target RPM.
d10	Current RPM Displays BLDC current RPM.
d11	Water supply pulse counter used in total. Displays total flow meter pulse.
d12	Reference Turbidity Data Displays the reference turbidity data.
d13	DC link Displays the DC link.
d14	Motor Power Displays the operating motor power.

Test Mode for DW80J3020 and DW80K2021 series

➢ How to enter: Press Heavy + Quick + Power Button simultaneously.

1. All LED's light up for 2 seconds & sends out Beep when it enters into the Test Mode.
2. Displays software version in Binary Code by using 'Normal' + 'Heavy' + 'Quick' + Auto LED.
3. Continue to press the "Normal" button to test the unit and also advance the test cycle in sequence order.

Mode	Display	Note
t1	**Auto LED**	Water fill system test. Drain pump is turned on to drain out the left over water. Once no water (Switch Open) status is detected, unit will start to supply water until it reaches the water level. If there is no water supplied 5 Seconds after the water filling cycle starts, water supply error will be displayed('Auto' LED blinking).
t2	**Quick LED**	Main Motor test. (High Speed) Main motor is turned on and run on high speed. (190W rating) In case the water line is disconnected, skip test 1. 'Quick' + 'Sanitize' LED will blink for 5 seconds. Fill in water manually to do the rest of the tests. (Same can be done for all of the following steps)
t3	**Quick + Auto LED**	Main Motor test. (Low Speed) Main motor is turned on and run on low speed. (150W rating)
t4	**Heavy LED**	Main Motor, heating system, & soap dispenser test. While main motor is operating, heater is turned on to heat the water. When water temperature reaches 50℃, the heater is turned off and 'Wash' LED will blink. If Heater or Thermistor have problems, the Heater Error 'Heavy' + 'Quick' LED will blink which indicates the test is finished. Soap dispenser will be opened at around the 130 seconds point.
t5	**Heavy + Quick + Auto LED**	Drying system & Rinse Aid dispenser test. Operate Vent Motor and check whether Rinse Aid is refilled. If the 'Rinse Aid' dispenser is empty, 'Rinse Refill' LED will be on.
t6	**Normal LED**	Water level limitation test. Supply water until it reaches the high limit sensor. Unit will be shut down, water should be drained out, and over fill error will be displayed. ('Heavy' + 'Auto' LED blinking).
t7	**Normal + Auto LED**	Drain system test. Operates the drain pump 60 seconds and drain out water.

Test Mode for DMT350/610/800, DW80F800

➢ How to enter: Press Heavy + Delicate + Power Button simultaneously.

1. All LEDs light up for about 2 seconds & sends out a beeping sound.
2. Displays software version (Ex. “Micom-Version.” e.g. “8” for DMT800
3. Press “Normal” key to start the test & also advance the test cycle in sequence order.

Mode	Display	Note
t1	Ft	Water fill system test. Drain pump is turned on to drain out the left over water. Once no water (Switch Open) status is detected, unit will start to supply water until it reaches the water level. If there is no water supplied 5 Seconds after the water filling cycle starts, “4E” error code will be displayed. If Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses, “9E” error code will be displayed.
t2	Lc	Main motor test. (High Speed) Main motor is turned on and run on high speed. (190W rating) In case the water line is disconnected, skip test 1. Unit will blink LL and Lc alternately for 5 seconds. Fill in water manually to do the rest of the tests. (Same can be done for all of the following steps)
t3	Ld	Main motor test. (Low Speed) Main motor is turned on and run on low speed. (150W rating)
t4	Hd	Main Motor, heating system, & soap dispenser test. While the main motor is operating, heater is turned on to heat the water. There will be a number & Hd displayed alternately. This number indicates the water temperature which should increase constantly until reaches 60˚C. When the temperature reaches 60℃, the heater is turned off. Soap dispenser will be opened at around the 130 seconds point.
t5	SH	Full load to Half load function test. (For DMT800, DW80F800) Operate the main motor after initializing the Synchronous motor to Half Load location.
t6	SP	Half load function & Storm wash function test. (For DMT800, DW80F800) Operate the main motor to test Half Load and storm wash function.
t7	dF	Drying system test and Rinse Aid dispenser inspection. Operate Vent Motor and check whether Rinse Aid is refilled. If the Rinse Aid dispenser is empty, Rinse Refill lamp will be ON.
t8	L	Water level limitation test. Supply water until it reaches the high limit sensor. Unit will be shut down, water should be drained out, and “oE” code will be displayed.
t9	S	Drain system test. Drain out water until Low Water Level or no water is detected (Switch open). If low water level status is not detected 3 minutes after the drain pump starts , unit will show 5E error code.

Test Mode for DMT400, DW80F600*

- How to enter: Press Heavy + Delicate + Power Button simultaneously.

1. All LED's light up for 2 seconds & sends out Beep when it enters into the Test Mode.
2. Displays software version in Binary Code by using 'Normal' + 'Heavy' + 'Delicate' + 'Smart Auto' LED.
3. Continue to press the "Normal" button to test the unit and also advance the test cycle in sequence order.

Mode	Display	Note
t1	**Smart Auto LED**	Water fill system test. Drain pump is turned on to drain out the left over water. Once no water (Switch Open) status is detected, unit will start to supply water until it reaches the water level. If there is no water supplied 5 Seconds after the water filling cycle starts, water supply error will be displayed('Smart Auto' LED blinking). If Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses, low water level error will be displayed. ('Normal' + 'Heavy' + 'Smart Auto' LED blinking).
t2	**Delicate LED**	Main Motor test. (High Speed) Main motor is turned on and run on high speed. (190W rating) In case the water line is disconnected, skip test 1. 'Delicate' + 'Sanitize' LED will blink for 5 seconds. Fill in water manually to do the rest of the tests. (Same can be done for all of the following steps)
t3	**Delicate + Smart Auto LED**	Main Motor test. (Low Speed) Main motor is turned on and run on low speed. (150W rating)
t4	**Heavy LED**	Main Motor, heating system, & soap dispenser test. While the main motor is operating, heater is turned on to heat the water. When the water temperature reaches 60℃, the heater is turned off and 'Wash' LED will blink. If Heater or Thermistor have problems, the Heater Error 'Heavy' + 'Delicate' LED will blink which indicates the test is finished. Soap dispenser will be opened at around the 130 seconds point.
t5	**Heavy + Delicate + Smart Auto LED**	Drying system & Rinse Aid dispenser test. Operate Vent Motor and check whether Rinse Aid is refilled. If the 'Rinse Aid' dispenser is empty, 'Rinse Refill' LED will be on.
t6	**Normal LED**	Water level limitation test. Supply water until it reaches the high limit sensor. Unit will be shut down, water should be drained out, and over fill error will be displayed. ('Heavy' + 'Smart Auto' LED blinking).
t7	**Normal + Smart Auto LED**	Drain system test. Drain out water until Low Water Level or no water is detected (Switch open). If low water level status is not detected 3 minutes after the drain pump starts , drain error will be displayed ('Delicate' LED blinking).

Test Mode for DW7933

➢ How to enter: Press Heavy + Quick + Power Button simultaneously.

1. All LED's light up for 2 seconds & sends out Beep when it enters into the Test Mode.
2. Displays software version in Binary Code by using 'Normal' + 'Heavy' + 'Quick' + 'Smart Auto' LED.
3. Continue to press the "Normal" button to test the unit and also advance the test cycle in sequence order.

Mode	Display	Note
t1	**Smart Auto LED**	Water fill system test. Drain pump is turned on to drain out the left over water. Once no water (Switch Open) status is detected, unit will start to supply water until it reaches the water level. If there is no water supplied 5 Seconds after the water filling cycle starts, water supply error will be displayed('Smart Auto' LED blinking). If Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses, low water level error will be displayed. ('Normal' + 'Heavy' + 'Smart Auto' LED blinking).
t2	**Quick LED**	Main Motor test. (High Speed) Main motor is turned on and run on high speed. (190W rating) In case the water line is disconnected, skip test 1. 'Quick' + 'Sanitize' LED will blink for 5 seconds. Fill in water manually to do the rest of the tests. (Same can be done for all of the following steps)
t3	**Quick + Smart Auto LED**	Main Motor test. (Low Speed) Main motor is turned on and run on low speed. (150W rating)
t4	**Heavy LED**	Main Motor, heating system, & soap dispenser test. While main motor is operating, heater is turned on to heat the water. When water temperature reaches 60℃, the heater is turned off and 'Wash' LED will blink. If Heater or Thermistor have problems, the Heater Error 'Heavy' + 'Quick' LED will blink which indicates the test is finished. Soap dispenser will be opened at around the 130 seconds point.
t5	**Heavy + Quick + Smart Auto LED**	Drying system & Rinse Aid dispenser test. Operate Vent Motor and check whether Rinse Aid is refilled. If the 'Rinse Aid' dispenser is empty, 'Rinse Refill' LED will be on.
t6	**Normal LED**	Water level limitation test. Supply water until it reaches the high limit sensor. Unit will be shut down, water should be drained out, and over fill error will be displayed. ('Heavy' + 'Smart Auto' LED blinking).
t7	**Normal + Smart Auto LED**	Drain system test. Drain out water until Low Water Level or no water is detected (Switch open). If low water level status is not detected 3 minutes after the drain pump starts , drain error will be displayed ('Quick' LED blinking).

Test Mode for DMT210/300

➢ How to enter: Press Heavy + Delicate + Power Button simultaneously.

1. All LEDs light up for 2 second and sends out a beeping sound.
2. Displays software version in Binary Code by using 'Wash + Dry + Clean + Child Lock' LED.
3. Press "Normal" key to start the test and also advance the test cycle in sequence order. *
   Door must be closed during the test mode.

Mode	Display	Note
t1	Quick LED	Water fill system test. Drain pump is turned on to drain out the left over water. Once no water (Switch Open) status is detected, unit will start to supply water until it reaches the water level. If there is no water supplied 5 Seconds after the water filling cycle starts, water supply error will be displayed ('Quick' LED blinking). If Low Water Level or no water is detected after water has been supplied and the flow meter counted to 660 pulses, low water level error will be displayed ('Normal' + 'Heavy' + 'Quick' LED blinking).
t2	Delicate LED	Main Motor test. Main motor is turned on if test 1 is passed. In case the water line is disconnected, skip test 1. 'Sanitize' LED will blink for 5 seconds. Fill in water manually to do the rest of the tests. (Same can be done for all of the following steps)
t3	Delicate+ Quick LED	Main Motor, heating system, & soap dispenser test. While the main motor is operating, heater is turned on to heat the water. When the water temperature is 60℃, the heater is turned off and 'Wash' LED will blink which indicates the test is finished. If Heater or Thermistor have problem, the Heater Error will be displayed. ('Heavy' + 'Delicate' LED blinking). Soap dispenser will be opened at around the 130 seconds point.
t4	Heavy + Quick LED	Drying system & Rinse Aid dispenser test. Operate Vent Motor and check whether Rinse Aid is refilled. If the Rinse Aid Dispenser is empty, 'Rinse Refill' LED will be on.
t5	Heavy + Delicate LED	Water level limitation test. Supply water until it reaches the high limit sensor. Unit will be shut down, water should be drained out, and over fill error will be displayed. ('Heavy' + 'Quick' LED blinking).
t6	Heavy + Delicate + Quick LED	Drain system test. Drain out water until Low Water Level or no water is detected (Switch open). If low water level status is not detected 3 minutes after the drain pump starts , drain error 'Delicate' LED will blink.

TEST MODE for DMR57/77/78

➢ How to enter: Press Heavy + Delicate + Power Buttons simultaneously for 2 Seconds.

1. All LEDs will light up for about 2 seconds and sends out a Beeping Sound when it enters into the Quick Test Mode.
2. PCB software version will be displayed (Ex. “Software-Version.” H22, r22 etc.
3. Press “Normal” key to start the test & also advance the test cycle in sequence order.

* Door must be closed during the test.

* Quick test mode allows to test unit without water line, can fill water manually.

Mode	Display	Note
t1	⊟	Water fill system test. Drain pump is turned on to drain out the left over water. Once no water (Switch Open) status is detected, unit will start to supply water until it reaches the water level. If there is no water supplied 5 Seconds after the water filling cycle starts, “4E” error code will be displayed. If Low Water Level is detected after water has been supplied and the flow meter counted to 660 pulses, “9E” error code will be displayed.
t2	⊟⊟	Main Motor test. Main motor is turned on if test 1 is passed. In case the water line is disconnected, skip test 1. Unit will blink SUP and ⊟⊟ alternately for 5 seconds. Fill in water manually to do the rest of the tests. (Same can be done for all of the following steps)
t3	⊟ H	Main Motor, heating system, & soap dispenser test. While the main motor is operating, heater is turned on to heat the water. There will be a number &⊟ H displayed alternately. This number indicates the water temperature which should increase constantly until reaches 60°C. When the temperature reaches 60℃, the heater is turned off. Soap dispenser will be opened at the 20 ~ 30 seconds point.
t4	Sn	Full load to Half load function test. Operate the main motor after initializing the Synchronous motor to Half Load location. (For DMR77/78 only, Skip to next for DMR57)
t5	dr	Drying system test. Operate Vent Motor and check whether Rinse Aid is refilled.
t6	L	Water level limitation test. Supply water until it reaches the high limit sensor. Unit will be shut down, water should be drained out, and “oE” code will be displayed.
t7	S	Drain system test. Drain out water until Low Water Level or no water is detected (Switch open). If low water level status is not detected 3 minutes after the drain pump starts , unit will show 5E error code.

Digital Appliances Division

SAMSUNG

Sixth Edition

Refrigerator
Test Mode & Error Code List

Table of Contains

1. Sensor Resistance Value Table
2. Self-Diagnostics Mode
3. Error Code List
4. Manual Operation & Test Mode
   - Forced Operation (Cooling) Mode
   - Forced Defrost Mode
   - Cool Off / Exhibition / Demo Mode
   - Calibration Mode

Refer to the service manual on the GSPN for more information

Created By: Guanniu (Victor) Han

Model Code List

French Door three doors style

RF26J7500**
RF18/20HFEND*
RF23HC/TEDB*
RF26HFEND*
RF28HFEDT/B*
RF323TED**
RFG237/293/295/297**, RFG297HD**, RFG29PH**
RF220/221NCTA*
RF195/197/215/217**
RF260/261/263/265/266/267**

French door four doors style

RF23M8097/70**
RF22KREDB**
RF28K9070**
RF28JBEDB**
RF25/28HMDB*
RF23HSESB*
RF30HBEDB*
RF34H99**,
RF32FMQDB**
RF24FSEDB*
RF31FMEDB*
RF4267/4287HA**

LCD/Tablet display style

RF22M9581*
RF28K9580SR*,
RF265BEA*
RF28HMELB**,
RS27FD**
RF4289**

Model Code List

Side by side style

RH22H9010**
RS22HDHPN*
RS263/265/267TD**
RSG257/307**
RS253/257/265/267/269/275/277**
RS2555/2530/2630**
RM255/257**

BMF two doors style

RL220NCTA**
RL34EG**
RB194/196/214/216**
RB193/195/213/215**
RB1855/2055**

TMF two doors style

RT18/21M621*

Refrigerator Test Mode & Error Code list

Index-1

Error Codes **127 ~ 140**

Sensor Resistance Value Table..... **127**

Standard Error Code List..... **128 ~ 131**

Error Code List for RT18/21M621* TMF with LED Bar Display..... **132**

Error Code List for RF220/221 & RL220 with LED Bar Display..... **133**

7 Segments Digital Display Error Code List..... **134 ~ 136**

Error Code List for RS263TD** with LED Bar Display..... **137**

Error Code List for RS2530/2630 with LED Bar Display..... **138**

Display Function of Communication Error..... **139**

LED Blinking Codes for Inverter Compressor Units..... **140**

Self Diagnostic Modes **141 ~ 153**

Self Diagnostic Mode for RT18/21M621* TMF 2 door style **141**

Self Diagnostic Mode for French door 3 doors style..... **142**

Self Diagnostic Mode for French door 4 doors style..... **143**

Self Diagnostic Mode for French door 4 doors S*S style..... **144**

Self Diagnostic Mode for LED bar display style..... **145**

Self Diagnostic Mode for Family Hub style..... **146 ~ 147**

Self Diagnostic Mode for RF4289, RS27FD, RF28HMEL..... **148 ~ 149**

Error History Checking & WiFi Checking for LCD display style..... **150 ~ 151**

Self Diagnostic Mode for BMF 2 door style..... **152**

Self Diagnostic Mode for S*S Regular Display style..... **153**

Refrigerator Test Mode & Error Code list

Index-2

Manual Operation & Test Modes **154 ~ 176**

Manual Operation & Test Mode Part 1 for RF23M80*…….. **154 ~ 155**

Manual Operation & Test Mode Part 2 for TMF RT18/21M62*…….. **156 ~ 157**

Manual Operation & Test Mode Part 3 for RF28K9070**…….. **158 ~ 159**

Manual Operation & Test Mode Part 4 ……..…….. **160 ~ 161**

Manual Operation & Test Mode Part 5…….. **162 ~ 163**

Manual Operation & Test Mode Part 6 for family hub..…….. **164 ~ 165**

Manual Operation & Test Mode Part 7 for LCD panel style……..…... **166 ~ 167**

Manual Operation & Test Mode Part 8 for LED bar display……..... **168**

Manual Operation & Test Mode Part 9 for RF18/20HFE**…..……... **169 ~ 170**

Manual Operation & Test Mode Part 10……..……... **171 ~ 172**

Manual Operation & Test Mode Part 11 For RS263TD**…….. **173**

Manual Operation & Test Mode Part 12……..……... **174 ~ 175**

Manual Operation & Test Mode Part 13 For RH22H90** & RL34**... **176**

Cool Off / Exhibition / Demo mode ……..…... **177**

Calibration Modes **178 ~ 188**

Calibration Mode for RF34H99**, & RF23M80**…..……..…….. **178 ~ 179**

Calibration Mode for RT18/21M80**……..……..…….. **180 ~ 181**

Calibration Mode for Family Hub Style……..……..... **182**

Calibration Mode for RF4289, RS27FD, RF28HMEL…….. **183 ~ 184**

Calibration Mode for regular display style……..……..…….. **185 ~ 186**

Calibration Mode for LED bar display style…….. **187 ~ 188**

Sensor Resistance Value Table

Temp. (°F)	Temp. (°C)	Resistance (Ω)
-49	-45	115631
-47.2	-44	109413
-45.4	-43	103569
-43.6	-42	98073
-41.8	-41	92903
-40	-40	88037
-38.2	-39	83456
-36.4	-38	79142
-34.6	-37	75077
-32.8	-36	71246
-31	-35	67634
-29.2	-34	64227
-27.4	-33	61012
-25.6	-32	57977
-23.8	-31	55112
-22	-30	52406
-20.2	-29	49848
-18.4	-28	47431
-16.6	-27	45146
-14.8	-26	42984
-13	-25	40938
-11.2	-24	39002
-9.4	-23	37169
-7.6	-22	35433
-5.8	-21	33788
-4	-20	32230
-2.2	-19	30752
-0.4	-18	29350
1.4	-17	28021
3.2	-16	26760
5	-15	25562
6.8	-14	24425
8.6	-13	23345
10.4	-12	22320
12.2	-11	21345
14	-10	20418
15.8	-9	19537
17.6	-8	18698
19.4	-7	17901
21.2	-6	17142
23	-5	16419
24.8	-4	15731
26.6	-3	15076
28.4	-2	14452
30.2	-1	13857
32	0	13290
33.8	1	12749
35.6	2	12233
37.4	3	11741
39.2	4	11271
41	5	10823
42.8	6	10395
44.6	7	9986
46.4	8	9596
48.2	9	9223
50	10	8867
51.8	11	8526
53.6	12	8200
55.4	13	7888
57.2	14	7590
59	15	7305
60.8	16	7032
62.6	17	6771
64.4	18	6521
66.2	19	6281
68	20	6052
69.8	21	5832
71.6	22	5621
73.4	23	5419
75.2	24	5225
77	25	5039
78.8	26	4861
80.6	27	4690
82.4	28	4526
84.2	29	4369
86	30	4218
87.8	31	4072
89.6	32	3933
91.4	33	3799
93.2	34	3670
95	35	3547
96.8	36	3428
98.6	37	3344
100.4	38	3204
102.2	39	3098
104	40	2997
105.8	41	2899
107.6	42	2805
109.4	43	2714
111.2	44	2627
113	45	2543
114.8	46	2462
116.6	47	2384
118.4	48	2309
120.2	49	2237
122	50	2167
123.8	51	2100
125.6	52	2036
127.4	53	1973
129.2	54	1913
131	55	1855
132.8	56	1799
134.6	57	1745
136.4	58	1693
138.2	59	1642
140	60	1594
141.8	61	1547
143.6	62	1502
145.4	63	1458
147.2	64	1416
149	65	1375

This Sensor Resistance Value table applies to all Samsung fridges

Standard Error Code List

Display		Item	Reason / Solution
L	R		
1	E or C	Freezer Temperature Sensor Error	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
2		Refrigerator Temperature Sensor Error	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
4		Freezer Defrost Sensor Error	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
5		Refrigerator Defrost Sensor Error	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
6		Ambient Temperature Sensor Error	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
7		Pantry Temp Sensor or Flax Room Temp Sensor Error	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
8		Ice Maker Sensor Error (Ice Maker inside freezer)	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
9		Cool Select Room temp sensor Error (4 doors style)	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
11		Cool Select Room defrost sensor Error (4 doors style)	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
13		Humidity Sensor Error	Separation of sensor housing part, disconnection, or short circuit
14		Ice Maker Sensor Error (Icemaker inside Refrigerator)	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
15		Icemaker Room Temperature Sensor Error	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
16		Refrigerator Humidity Sensor Error (4 doors style)	Separation of sensor housing part, disconnection, or short circuit

Standard Error Code List

Display		Item	Reason / Solution
L	R		
17	E or C	Sparkling-Sensor Error (4 doors style)	Connector Slipped-Out or Open-Contact, Wire Cut or Short-Circuited Open Sensor suspected to be below -50˚C Short Sensor suspected to be over 65˚C
21		Freezer Evaporator Fan Motor Error	No feedback from fan motor to PCB Power voltage should be DC 7V~12V.
22		Refrigerator Evaporator Fan Motor Error	No feedback from fan motor to PCB Power voltage should be DC 7V~12V.
23		Condenser Fan Motor Error	No feedback from fan motor to PCB Power voltage should be DC 7V~12V.
24		Freezer Defrost Heater Loop Error	Heater or thermal fuse/bi-metal is open, defrost operation is longer than 80 minutes.
25		Refrigerator Defrost Heater Loop Error	Heater or thermal fuse/bi-metal is open, defrost operation is longer than 80 minutes.
26		Ice Maker Function Error (Ice Maker inside freezer)	Ejection restoration failure more than 3 times or horizontal lever positioning error
27		Pantry-Damper-Heater or Flax Room Damper-Heater Error	Damper Heater open/wire error
29		Cool Select Room defrost Heater Loop Error	Heater or thermal fuse/bi-metal is open, defrost operation is longer than 80 minutes.
31		Cool Select Room Fan Motor Error	No feedback from fan motor to PCB Power voltage should be DC 7V~12V.
33		Ice Pipe-Heater Error	Ice pipe heater is open or wire connector is loose/bad.
39		Icemaker Function Error (Icemaker inside Refrigerator)	Ice Ejection restoration failure more than 3 times or horizontal lever positioning error
40		Ice Room Fan Error (Icemaker inside Refrigerator)	No feedback from fan motor to PCB Power voltage should be DC 7V~12V.

Standard Error Code List

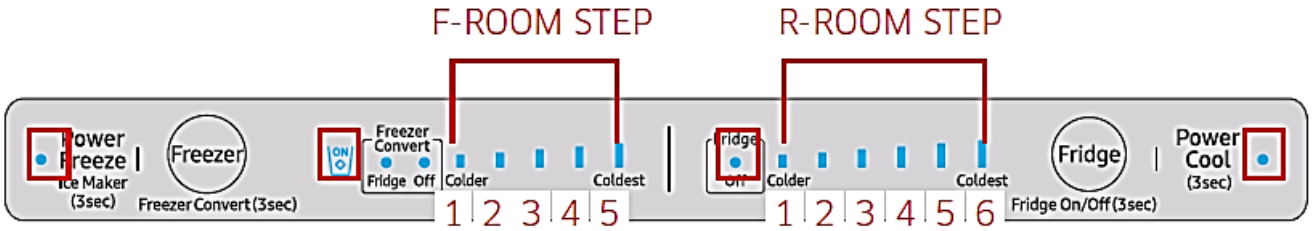
Display		Item	Reason / Solution
L	R		
41	***E*** **or** ***C***	PCB Main ↔ Control Panel Communication Error	PCB main or display PCB defect Loose wire connection between 2 boards.
44		PCB Main ↔ Freezer Comp. Inverter Communication Error	PCB main defect Freezer Comp. Inverter PCB defect Loose wire connection between 2 boards.
45		PCB Main ↔ Refrigerator Comp. Inverter Communication Error	PCB main defect Refrigerator Comp. Inverter PCB defect Loose wire connection between 2 boards.
46		PCB Main ↔ I/O Expander Communication Error	PCB main or I/O Expander defect Loose wire connection between 2 boards
47		PCB main ↔ Dispenser Panel Error (4 doors style)	PCB main or display PCB defect Loose wire connection between 2 boards.
61		Ice Duct Heater Error	Heater loop is open or wire connector is loose/bad in ice duct
62		Pantry Fan Error	No feedback from signal line while fan motor is operating.
65		Ice Room / bucket Heater Error	Heater loop is open or wire connector is loose/bad in ice room.
66		Door Handle Heater Error	Heater loop is open in handle
71		Abnormal High Temperature of Freezer	Freezer temperature rises abnormally or Freezer Door remains open.
72		Abnormal High Temperature of Fridge	Refrigerator temperature rises abnormally or Refrigerator Door remains open.
73		Convertible zone Temperature Error	Convertible zone Temperature rises abnormally or Convertible zone Door remains open.
76		AUTO FILL Infuser Overflow Error	Auto fill infuser overflow sensor detected water around, sensor open, short circuit or connection problem.
81		Inverter IPM fault Error	Intelligent Power Modules (IPM) of the inverter PCB fault error

Standard Error Code List

Display		Item	Reason / Solution
L	R		
82	E or C	Inverter IPM fault Error	Intelligent Power Modules (IPM) of the inverter PCB fault error
83		Compressor Abnormal Current Detection Error	When there is abnormal current detected at the compressor
84		Compressor Motor Locked Over RPM Error	When there is a compressor restriction error
85		Compressor Under Voltage Error	When there is a low voltage error
86		Compressor Over Voltage Error	When there is a over voltage error
87		Refrigerator Compressor start failure Error (4 doors style)	Refrigerator Compressor has failed to start.
88		Refrigerator Compressor IPM fault error (4 doors style)	Refrigerator Compressor Intelligent Power Modules (IPM) of the inverter PCB fault error
89		Refrigerator Compressor location detection error (4 doors style)	Abnormal current is detected in the Refrigerator Compressor .
90		Refrigerator Compressor motor constraint error (4 doors style)	Refrigerator Compressor motor is constrained.
91		Refrigerator Compressor low voltage error (4 doors style)	AC Input Voltage to the Refrigerator Compressor is too low.
92		Refrigerator Compressor over voltage error (4 doors style)	AC Input Voltage to the Refrigerator Compressor is too high.
93		Sparkling Tank Overflow	Sparkling tank overflow sensor open, short, or loose connection.
94		Water Supply to Sparkling Tank Error	Sparkling tank water level sensor open, short, or loose connection.

Error Code List for RT18/21M621* TMF Refrigerator

Error codes are displayed by a light up/flash LED segments that been numbered from ① to ⑦ as shown on the picture. Please follow this instruction to read the code correctly.



Trouble item	Display	Trouble contents
Refrigerator Defrost Sensor Error	**Fridge Off**	Open Sensor, sensor value below -50°C Short Sensor, sensor value over 65°C
Compressor Error	**R3**	Compressor fails to start, abnormal current, abnormal voltage, and IPM error.
Refrigerator Temp Sensor Error	**F2**	Open Sensor, sensor value below -50°C Short Sensor, sensor value over 65°C
Fridge Fan Error	**Power Freeze**	Fridge fan restraint or defect
Ice Maker sensor / Function Error	**Ice On**	Ejection restoration failure more than 3 times.
External Ambient Sensor Error	**F4**	Open Sensor, sensor value below -50°C Short Sensor, sensor value over 65°C
Freezer Temp Sensor Error	**F3**	Open Sensor, sensor value below -50°C Short Sensor, sensor value over 65°C
Freezer Defrost Sensor Error	**F1**	Open Sensor, sensor value below -50°C Short Sensor, sensor value over 65°C
Freezer Fan Error	**R6**	Freezer fan restraint or defect
Condenser Fan Error	**R5**	Condenser fan restraint or defect
Freezer Defrost heater Error	**F5**	Freezer defrost heater loop open. Defective Heater, or defective thermal bimetal / fuse.

Error Code List for RF220/221 & RL220 Refrigerator

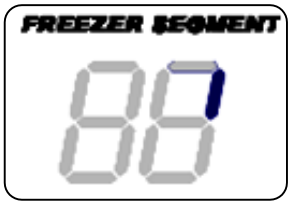
Error codes are displayed by a light up/flash LED segments that been numbered from ① to ⑦ as shown on the picture. Please follow this instruction to read the code correctly.

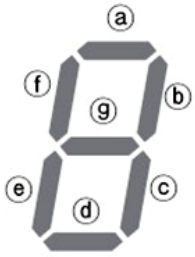
Trouble item	Display	Trouble contents
Ice Maker Sensor Error	**R1**	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 65°C
Compressor Error	**R3**	Compressor fails to start, abnormal current, abnormal voltage, and IPM error.
Refrigerator Temp Sensor Error	**R4**	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 65°C
Freezer Ice Pipe Heater Error	**R6**	Ice pipe heater open / wiring defect. (102Ω ±7%.)
Ice Maker Function Error	**R7**	Ejection restoration failure more than 3 times.
External Ambient Sensor Error	**F1**	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 65°C
Freezer Temp Sensor Error	**F2**	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 65°C
Freezer Defrost Sensor Error	**F3**	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 65°C
Freezer Fan Error	**F4**	Freezer fan restraint or defect
Condenser Fan Error	**F5**	Condenser fan restraint or defect
Humidity Sensor Error	**F6**	Separation of sensor housing part, disconnection, or short circuit
Freezer Defrost heater Error	**F7**	Freezer defrost heater contact failure, breakage of wire, short circuit, Defective Heater, or defective thermal bimetal / fuse.

7 Segments Digital Display Error Code List

For many of the Samsung refrigerators, error codes are displayed by a light up/flash LED segment of the digital number “8”. To read the code correctly, please follow the instruction below:

1. Digital “8” is consisting of seven segments (Segment ⓐ to ⓖ), see picture for details.
2. There are two pairs of digital eight “88” and “88” showing on the display panel. The pair on the left side is for freezer temperature display and the pair on the right side is for refrigerator temperature display.
3. If the light up/flash LED segments are showing on freezer side, we read as “F…”, similarly, the light up/flash LED segments that shows on refrigerator side are called “R…”.
4. On each side, the one sits on one’s column is read as “.1..” and the one sits on ten’s column is read as “..10..”, e.g. R-1…, F-10…
5. Combine with the location and position of the flash/light up segment, there are up to 28 error codes can be displayed. Refer to the error code list for details.





Example of Error Code F-1-ⓑ,
Freezer Temperature Sensor Error

Trouble item	Display	Trouble contents
Ice Maker Sensor Error	R-1-ⓐ	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Refrigerator Temperature Sensor Error	R-1-ⓑ	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Refrigerator defrost Sensor Error	R-1-ⓒ	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Refrigerator Evaporator Fan Motor Error	R-1-ⓓ	No feedback from fan motor to PCB Power voltage should be DC 7V~12V.
Ice Maker Error	R-1-ⓔ	Ice Maker operation error
Cool Select Zone Temperature Sensor Error (For S*S styles)	R-1- ⓕ	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Refrigerator Defrost Heater Error	R-1-ⓖ	Heater power on longer than 80 minutes

7 Segments Digital Display Error Code List

Trouble item	Display	Trouble contents
Pantry-Damper-Heater Error (For French door style)	R-10-ⓐ	Damper heater open/wire error
CR (Convertible Refrigerator) Temperature Sensor Error (For RM255/257 Quatro door style)	R-10-ⓑ	Open Sensor suspected to be below -50˚C Short Sensor suspected to be over 50˚C
Pantry-Sensor Error (For French door style)	R-10-ⓑ	Pantry room Sensor part error
CR (Convertible Refrigerator) Defrost Sensor Error (For RM255/257 Quatro door style)	R-10-ⓒ	Open Sensor suspected to be below -50˚C Short Sensor suspected to be over 50˚C
CF (Convertible Freezer) Defrost Sensor Error (For RM255/257 Quatro door style)	R-10-ⓓ	Open Sensor suspected to be below -50˚C Short Sensor suspected to be over 50˚C
CR (Convertible Refrigerator) Defrost heater Error (For RM255/257 Quatro door style)	R-10-ⓔ	Heater on longer than 70 minutes
Ice Maker Function Error	R-10-ⓔ	Ejection restoration failure more than 3 times or horizontal leveling error
CF (Convertible Freezer) Defrost Heater Error (For RM255/257 Quatro Door style)	R-10-ⓕ	Heater on longer than 70 minutes
Ice Pipe Heater Error (For French door style)	R-10-ⓕ	Ice pipe heater open / wiring defect
Water Heater Error	R-10-ⓖ	Heater loop is open.
External Ambient Sensor Error	F-1-ⓐ	External Ambient Sensor error
Freezer Temperature Sensor Error	F-1-ⓑ	Open Sensor suspected to be below -50˚C Short Sensor suspected to be over 50˚C
Freezer Defrost Sensor Error	F-1-ⓒ	Open Sensor suspected to be below -50˚C Short Sensor suspected to be over 50˚C

7 Segments Digital Display Error Code List

Trouble item	Display	Trouble contents
Freezer Evaporator Fan Motor Error	F-1-ⓓ	No feedback from fan motor to PCB Power voltage should be DC 7V~12V.
Condenser Fan Motor Error	F-1-ⓔ	No feedback from fan motor to PCB Power voltage should be DC 7V~12V.
CF (Convertible Freezer) Temperature Sensor Error (For RM255/257 Quatro door style)	F-1-ⓕ	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Icemaker Room Sensor Error (For French door style)	F-1-ⓕ	Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Freezer Defrost Heater Error	F-1-ⓖ	Heater on longer than 80 minutes
CF (Convertible Freezer) Fan Error (For RM255/257 Quatro door style)	F-10-ⓐ	Fan motor error, no feedback signal to main PCB
Damper Heater Error (For Side by Side door style)	F-10-ⓐ	Heater power on longer than 80 minutes
CR (Convertible Refrigerator) Fan Error (For RM255/257 Quatro door style)	F-10-ⓑ	Fan motor error, no feedback signal to main PCB
Ice Room FAN Error	F-10-ⓑ	Ice Room inner fan motor part error
Ice Pipe Heater Error	F-10-ⓓ	Heater loop is open.
Uart Communication Error	F-10-ⓔ	Communication error with electric power cord MODEM
L ↔ M communication Error Micom Error	F-10-ⓕ	LOAD ↔ Main Micom communication error
Panel ↔ Main Micom Error	F-10-ⓖ	Panel ↔ Main Micom communication error

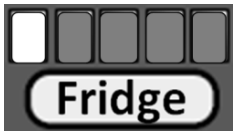
Error Code List for RS263TD with LED Bar Display

For RS263TD, error codes are displayed by a light up/flash LED segments that been numbered from ① to ⑦ . The most bottom LED is ①, the second bottom LED is ② … and the most top LED is ⑦. Please follow this instruction to read the code correctly.

Trouble item	Display		Trouble contents
Ice Maker Sensor Error	**Right- ① LED ON**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Refrigerator Defrost Sensor Error	**Right- ③ LED ON**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Refrigerator Temp Sensor Error	**Right- ④ LED ON**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Refrigerator Fan Error	**Right- ⑤ LED ON**		Refrigerator fan restraint or defect
Refrigerator Defrost Heater Error	**Right- ⑥ LED ON**		Refrigerator defrost heater contact failure, breakage of wire, short circuit, defective heater, or defective thermal bimetal / thermal fuse.
Ice Maker Function Error	**Right- ⑦ LED ON**		Ejection restoration failure more than 3 times.
External Ambient Sensor Error	**Left- ① LED ON**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Freezer Temp Sensor Error	**Left- ② LED ON**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Freezer Defrost Sensor Error	**Left- ③ LED ON**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Freezer Fan Error	**Left- ④ LED ON**		Freezer fan restraint or defect
Condenser Fan Error	**Left- ⑤ LED ON**		Condenser fan restraint or defect
Freezer Defrost heater Error	**Left- ⑦ LED ON**		Freezer defrost heater contact failure, breakage of wire, short circuit, Defective Heater, or defective thermal bimetal / fuse.

Error Code List for RS2530/2630 with LED Bar Display

For RS2630/2530, error codes are displayed by a light up/flash LED segments that been named as “MIN”, “MID”, and “MAX”. The most bottom /or left side LED is MIN, the centre LED is MID and the most top /or right side LED is MAX. Please follow this instruction to read the code correctly.

Trouble item	Display		Trouble contents
External Ambient Sensor Error	**Refrigerator "MIN"**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Refrigerator Temperature Sensor Error	**Refrigerator "MID"**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Damper Heater Error	**Refrigerator "MAX"**		Damper heater slipped away, poor contact, wire breakage, short circuit, or defective damper heater
Freezer Defrost Heater Error	**Freezer "MIN"**		Fall out freezer heater housing, contact failure, breakage of wire, short circuit, inferior freezer heater, or inferior defrost temp fuse and etc.
Freezer Defrost Sensor Error	**Freezer "MID"**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Freezer Temperature Sensor Error	**Freezer "MAX"**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
I/M Function Error	**ICE OFF**		Ejection restoration failure more than 3 times.
I/M Sensor Error	**Cubed LED**		Open Sensor suspected to be below -50°C Short Sensor suspected to be over 50°C
Freezer Fan Restraint	**Crushed Ice**		Freezer fan restraint or defect

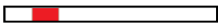
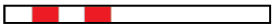
Display Function of Communication Error

Trouble item	Display	Trouble contents
“Pc – Er” “oP – Er” “Pc – Ch” Panel Display ↔ Main PCB Communication Error		If there is no answer for 10 seconds after the panel MICOM receives the command of communication, "Pc - Er“, “oP – Er”, or “Pc – Ch” message will be displayed. The error message will keep on blink until the communication error is resolved.
“Lc – Er” “oP – Ch” Load ↔ Main PCB Micom Communication Error		If there is no answer for 20 seconds after the main MICOM receives the command of communication from load MICOM, "Lc - Er" or “oP – Ch” message will be displayed. The error message will keep on blink until the communication error is resolved.

** Alarm will beep continuously until the problem been solved and there is no other way to make the sound stop.

LED Blinking Codes for Inverter Compressor Units

The LED that is on the Inverter PCB should be constantly ON during normal operation. It will blink if fault is detected. LED blinking frequency depends on fault condition.

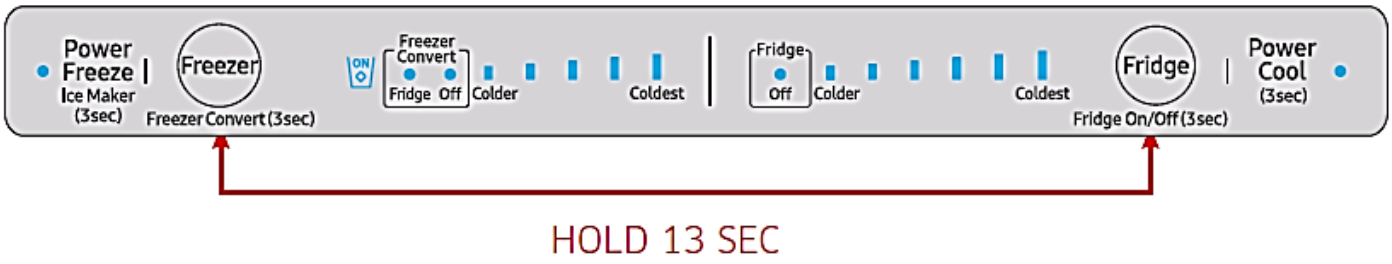
LED Blinking Frequency	Error Statue	Defective Parts
Constantly ON	Normal Operation	N/A
Blink once 	Starting Failure	**Inverter PCB or Compressor** • Short circuit between COMP U,V, and W phase. • Short among IPM Pins (No. #1 ~ 26) • IPM operating Voltage under DC 13.5V
Blink twice 	SPM/IPM Fault	
Blink three times	Abnormal Current	**Inverter PCB or Compressor** 1. Open loop between COMP U,V, and W phase. 2. Bad wire condition of between compressor and inverter.
Blink four times	Motor Locked / Over RPM	**Inverter PCB or Compressor** 1. COMP rotor been locked longer than 5 second. 2. COMP speed too low. (under 1000 RPM). 3. Huge input voltage change in a moment.
Blink five times	Low Voltage	**Inverter PCB or Compressor** 1. Input voltage to the inverter too low. (under AC 53V) 2. DC link resistor shorted.
Blink six times	Over Voltage	**Inverter PCB or Compressor** 1. Input voltage to the inverter too high. (over AC 155V) 2. DC link resistor shorted.
Blink seven times	Reversed	**Inverter PCB or Compressor** Output voltage from the inverter is reversed.

Self Diagnostic Mode for RT18/21M621* TMF Style

Self Diagnostic Mode can be used to check for all sensors, fan motors, and defrost heater circuits.

Self Diagnostic Mode can be entered by the following 2 ways.

1. **With initial power on, unit will run the Self diagnostic automatically.**
2. **During any of the regular operation, hold down the Freezer + Fridge buttons simultaneously for 13 seconds or longer to enter the Self Diagnostic Mode manually.**



2-1) At the time of 6 seconds during the buttons been held down simultaneously, the entire display will blink for 2 seconds at the interval of 0.5 second, keep on holding the buttons for 2 more seconds until the self diagnostic mode been activated.

2-2) Self Diagnosis function will be activated with a “Ding-Dong” sound. If there are any sensor, motor, or heater defect, the corresponding error code(s) will be displayed on the display panel, the applicable LED(s) will light up. (refer to error code list);
If there is no error found during the Self Diagnostic, the display should be a blank screen for 30 seconds, and then return to normal condition display.

2-3) When error is detected by self-diagnosis, the temperature control will be controlled by the emergency operation. The error message disappears after all troubled sensors and/or components have been corrected.

2-4) During self-diagnosis, all button inputs will not be recognized but only the canceling buttons.

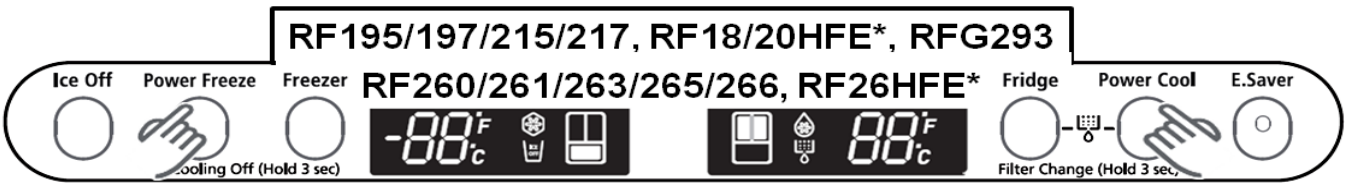
Self Diagnostic Mode for French 3 doors style

RF195/197/215/217/260/261/263/265/266/267, RF18/20HFEND* RFG237/293/295/297, RFG297HD, RFG29PH, RF323TED* RF23HC/TEDB*, RF26HFEND*, RF26J7500*, RF28HFEDB*

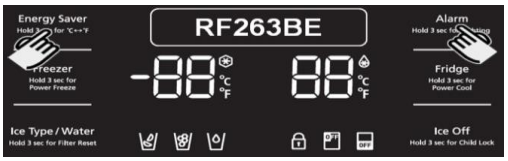
Self Diagnostic Mode can be used to check for all sensors, fan motors, and defrost heater circuits.

Self Diagnostic Mode can be entered by the following 2 ways.

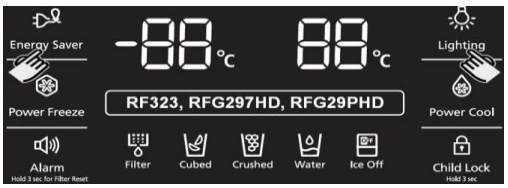
1. With initial power on, unit will run the Self diagnostic automatically.
2. During any of the regular operation, hold down the following buttons simultaneously for 8 seconds to enter Self Diagnostic Mode manually.
   - **Power Freeze + Power Cool for RF195/197/215/217/260/261, RFG293,**
   - **Power Freeze + Power Cool for RF26HFEND*, RF18/20HFE****
   - **Energy Saver + Alarm for RF263BE/TE**
   - **Energy Saver + Lighting for RF323TED, RFG297HD, RFG29PHD**
   - **Energy Saver + Lighting for RF267, RFG237/295/297AA/AB/AC**
   - **Freeze + Fridge for RF23HC/TEDB**, RF26/28HFEND**, RF26J7500**,**

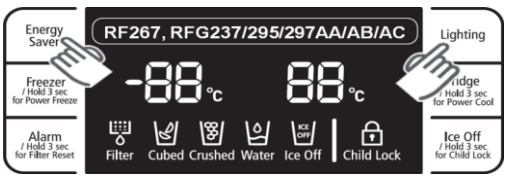


2-1) At the time of 6 seconds during the buttons been hold down simultaneously, the entire display will blink for 2 seconds at the interval of 0.5 second, keep on holding the buttons for 2 more seconds until the self diagnostic mode been activated.



2-2) Self Diagnosis function will be activated with a “Ding-Dong” sound. If there are any sensor, motor, or heater defective, the corresponding error code such as (1 E, 2 E etc) will be displayed on the display panel (Refer to error code list); if there are 2 or more errors been detected, the error codes will be displayed alternately on the display panel. If there is no error found during the Self Diagnostic, the display will be changed to a blank screen for 30 to 50 seconds, and then return back to normal condition display.





2-3) When the error is detected by self-diagnosis, the temperature control will be controlled by the emergency operation. The error message disappears after all troubled sensors and/or components have been corrected.

2-4) During self-diagnosis, all button inputs will not be recognized but only the canceling buttons.

Self Diagnostic Mode for French Four doors style

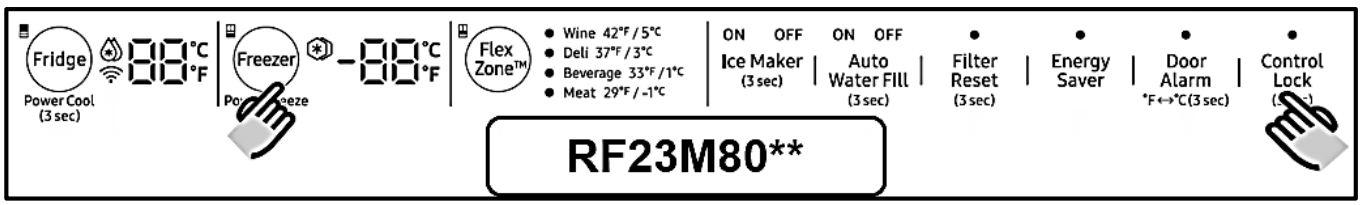
RF23M80**, RF22KR*, RF28JBEDB*, RF4267/4287**
RF25/28HM**, RF23/30HS*, RF24/31F*

Self Diagnostic Mode can be used to check for all sensors, fan motors, and defrost heater circuits.

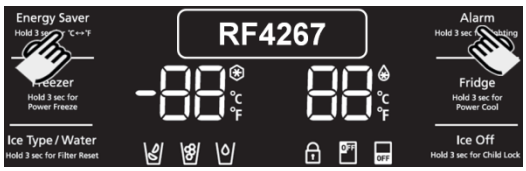
Self Diagnostic Mode can be entered by the following 2 ways.

1. With initial power on, unit will run the Self diagnostic automatically.
2. During any of the regular operation, hold down the following buttons simultaneously for 8 seconds (10 seconds for RF23M80**) to enter the Self Diagnostic Mode manually.

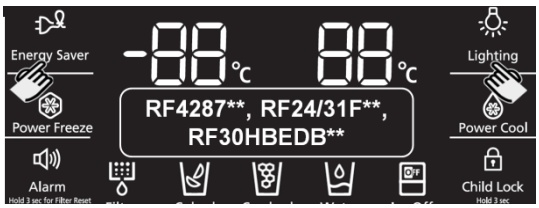
   - Energy Saver + Alarm for RF4267**
   - Energy Saver + Lighting for RF4287**, RF24/31FM**, RF30HBEDB*
   - Freeze + Fridge for RF28JBEDB**, RF23HSESB**, RF25/28HMEDB**
   - Freezer + Control Lock for RF23M80** (10 Seconds)



2-1) At the time of 6 seconds during the buttons been hold down simultaneously, the entire display will blink for 2 seconds (4 seconds for RF23M80**) at the interval of 0.5 second, keep on holding the buttons for 2 more seconds (4 seconds for RF23M80**) until the self diagnostic mode been activated.



2-2) Self Diagnosis function will be activated with a "Ding-Dong" sound. If there are any sensor, motor, or heater defective, the corresponding error code such as (1 E, 2 E etc) will be displayed on the display panel (Refer to error code list); if there are 2 or more errors been detected, the error codes will be displayed
alternately on the display panel. If there is no error found during the Self Diagnostic, the display will be changed to a blank screen for 30 to 50 seconds, and then return back to normal condition display.



2-3) When the error is detected by self-diagnosis, the temperature control will be controlled by the emergency operation. The error message disappears after all troubled sensors and/or components have been corrected.

2-4) During self-diagnosis, all button inputs will not be recognized but only the canceling buttons.

Self Diagnostic Mode for French Four doors style

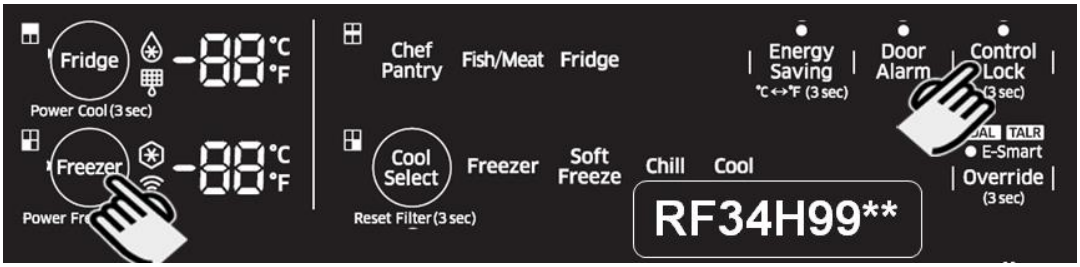
RF28K9070**, RF23J90**, RF34H99**, RF32F**,

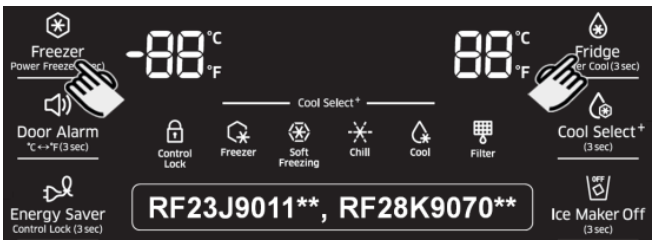
Self Diagnostic Mode can be used to check for all sensors, fan motors, and defrost heater circuits.

Self Diagnostic Mode can be entered by the following 2 ways.

1. With initial power on, unit will run the Self diagnostic automatically.
2. During any of the regular operation, hold down the following buttons simultaneously for 8 seconds (10 seconds for RF34H99**) to enter the Self Diagnostic Mode manually.

   - CoolSelect+ + Energy Saver for RF32FM**
   - Freeze + Fridge for RF28K9070**, RF23J9011**,
   - Freezer + Control Lock for RF34H99**(10 Seconds)





2-1) At the time of 6 seconds during the buttons been hold down simultaneously, the entire display will blink for 2 seconds (4 seconds for RF34H99**) at the interval of 0.5 second, keep on holding the buttons for 2 more seconds until the self diagnostic mode been activated. (4 seconds for RF34H99**)

2-2) Self Diagnosis function will be activated with a "Ding-Dong" sound. If there are any sensor, motor, or heater defective, the corresponding error code such as (1 E, 2 E etc) will be displayed on the display panel (Refer to error code list); if there are 2 or more errors been detected, the error codes will be displayed alternately on the display panel. If there is no error found during the Self Diagnostic, the display will be changed to a blank screen for 30 to 50 seconds, and then return back to normal condition display.

2-3) When the error is detected by self-diagnosis, the temperature control will be controlled by the emergency operation. The error message disappears after all troubled sensors and/or components have been corrected.

2-4) During self-diagnosis, all button inputs will not be recognized but only the canceling buttons.

Self Diagnostic Mode for LED bar display style

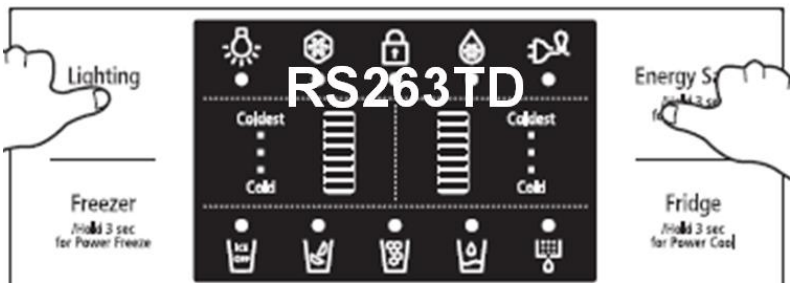
RF220/221, RL220, RS2530/2630, & RS263TD

Self Diagnostic Mode can be entered by the following 2 ways.

1. With initial power on, unit will run the Self diagnostic automatically.
2. During any of the regular operation, the following buttons seconds to manually.

- **Ice Type + Filter Reset for RS2530/2630**
- **Lighting + Energy Saver for RS263TD**
- **Ice Off + Energy Saver for RF220/221**
- **Power Freeze + Alarm for RL220**

Error codes are displayed by a light up/flash LED segments that been numbered from ① to ⑦ or named by MIN, MID, MAX. Please refer to the instruction to read the code correctly.



2-1) At the time of 6 seconds during the buttons been hold down simultaneously, the entire display will blink for 2 seconds at the interval of 0.5 second, keep on holding the buttons for 2 more seconds until the self diagnostic mode been activated.

2-2) Self Diagnosis function will be activated with a “Ding-Dong” sound. If there are any sensor, motor, or heater defective, the corresponding error code(s) will be displayed on the display panel, the applicable LED will either light up or blink. (refer to error code list); if there is no error found during the Self Diagnostic, the display should be a blank screen for 30 seconds, and then return to normal condition display.

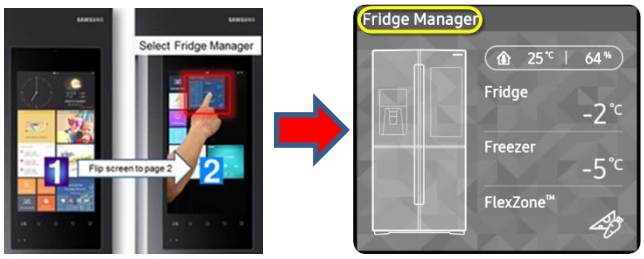
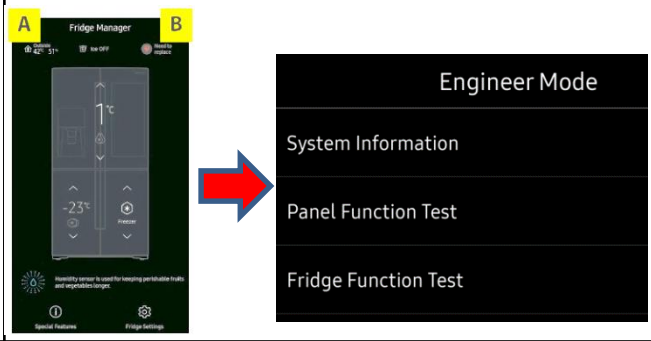
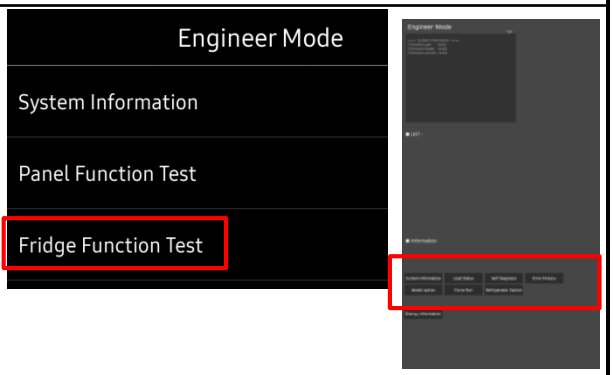
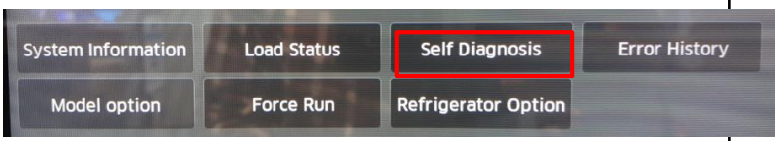
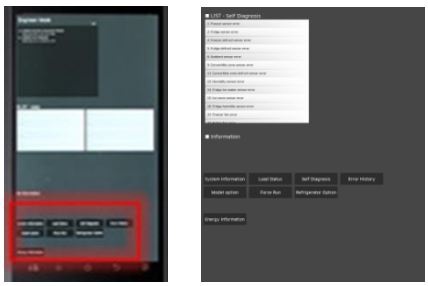
2-3) When the error is detected by self-diagnosis, the temperature control will be controlled by the emergency operation. The error message disappears after all troubled sensors and/or components have been corrected.

2-4) During self-diagnosis, all button inputs will not be recognized but only the canceling buttons.

Self Diagnostic Mode for RF28K95**, RF265B**, RF22M9581**

Self Diagnostic Mode can be entered by the following 2 ways.

1. With initial power on, unit will run the Self diagnostic automatically.
2. To run the Self Diagnostics function during normal operation, follow below procedures:

Sequence	Note
① Swipe the Home screen to the left to see the second display screen. Tap “Fridge Manager” to set the unit to the Fridge Manager Home Page. (The fridge temperature and options are displayed)	
② Tap "A" and "B" area as sequence of “A-B-A-B-A-B” on the display screen within 3 seconds, "Engineer Mode enable” message will be displayed as the popping up message and the display will change to the “Engineer Mode”.	
③Tap “Fridge Function Test” and then tap “Self Diagnostic” from the pop up screen to enter the Self Diagnostic Mode.	 
④ Current errors will be shown on the screen. Tap the error code, the detailed failure instruction is displayed. The Self Diagnosis function stays on for 60 seconds. If no error been found during the Self Diagnose, unit will show the standard code list only.	
⑤ Press the Return key to switch back to previous step; Press the Home key to exit / back to home page.	

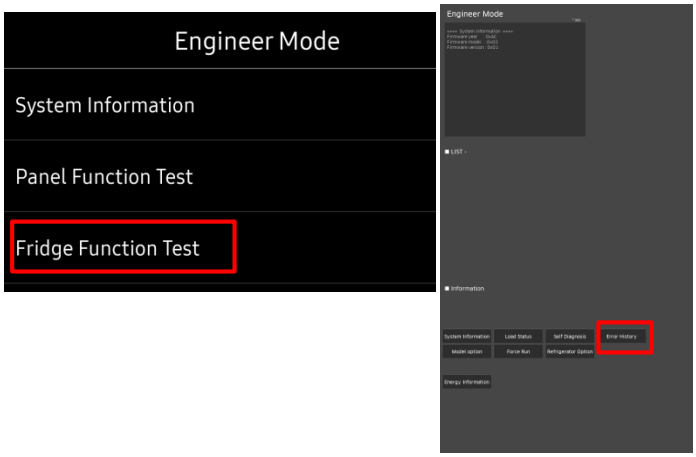
Self Diagnostic Mode for RF28K95**, RF265B**, RF22M9581**

Error History Checking for RF28K9580**, RF265B**, RF22M9581**

1. When refrigerator has errors with sensors and/or functions, it automatically stores the time and errors on the Error list. There are up to 5 events can be stored. Error History Checking Mode is used to check the errors and remove them.

** Power off will not remove the list of error codes, however, if "Reset" button is pressed under Error History Checking Mode, all the list will be cleared.

Set the unit to “Engineer Mode” to perform the test.

Sequence	Note
① Choose “Error History” upon entering the “Engineer Mode”.	
② Error History box shows currently occurred error list up to 5 events. Error History is recorded up to maximum 1000 and duplicate error does not display.	

Self Diagnostic Mode for RF4289, RS27FD, RF28HMEL

Self Diagnostic Mode can be used to check for all sensors, fan motors, and defrost heater circuits.

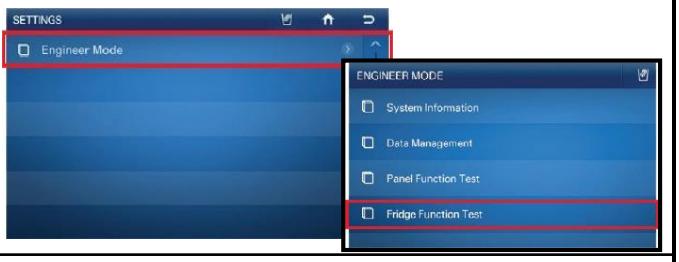
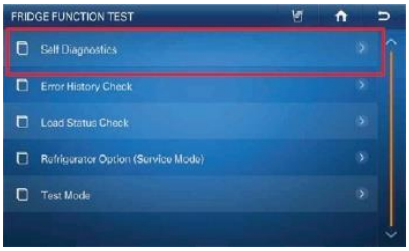
1) If any error occurs during the initial Power ON, error message will show on the display panel and the refrigerator will be running as emergency operation mode.

2) The error message will be canceled automatically once the troubled components been fixed.

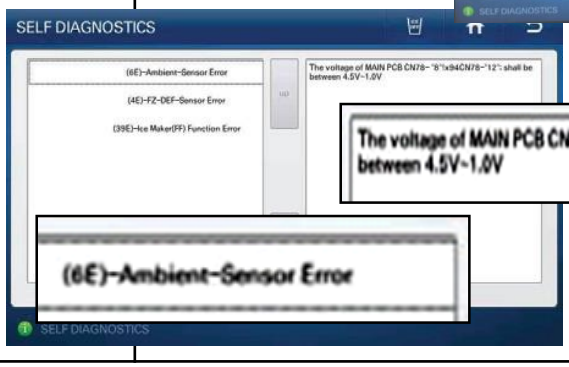
3) Press the "OK" button for 3 seconds on the error message box, the box will be disappeared. But it can be checked at the Self-Diagnostics mode.

Self Diagnostic Mode can be entered by the following 2 ways.

1. With initial power on, unit will run the Self diagnostic automatically.
2. To run the Self Diagnostics function during normal operation, follow below procedures:

Sequence	Note
① Tap "A" and "B" area as sequence of "A-B-A-B-A-B" on the display screen within 3 seconds, "Engineer Mode enable" message will be displayed for 1 second on the popping up window and then disappear.	
② After the "Engineer Mode enabled" message been displayed, touch the "Settings" Icon, the Setting window will be displayed.	
③ Continue to touch the Down Arrow Icon to scroll down the list of the Setting window until see "Engineer Mode". Tough the "Engineer Mode" to enter the Engineer Mode .	
④ Touch the "Fridge Function Test" from Engineer Mode window to enter the Fridge Function Test Mode.	
⑤ Touch the "Self Diagnostics" from "Fridge Function Test" window to enter the Self Diagnostics Mode.	

Self Diagnostic Mode for RF4289, RS27FD, RF28HMEL*

Sequence	Note
⑥ Current errors will be shown on the left side window if any error been detected. (No information on the screen means no error as been detected.) Touch the error message on the left side window, the detailed failure message will be displayed on right side window.	

Communication Error Displays

If there is no communication for 10 seconds between the control panel PCB and the PCB main, **(41 E) Panel ↔ MAIN communication** error message will pop up on the display panel.

If there is a communication problem between the control panel LCD module and the PCB main, **LCD Module trouble** message will pop up on the display panel.

If there is a high temperature been detected inside the fridge, **High Temperature** message will pop up on the display panel.

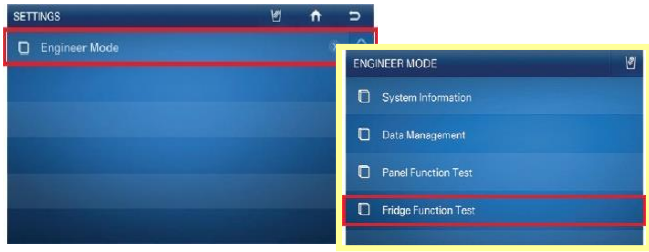
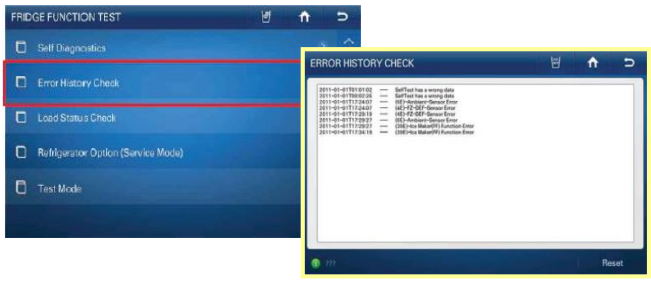
Error History Checking & WiFi Checking for LCD display style

1. When refrigerator has errors with sensors and/or functions, it automatically stores the time and errors on the Error list. There are up to 5 events can be stored. Error History Checking Mode is used to check the errors and remove them.

** Power off will not remove the list of error codes, however, if "Reset" button is pressed under Error History Checking Mode, all the list will be cleared.

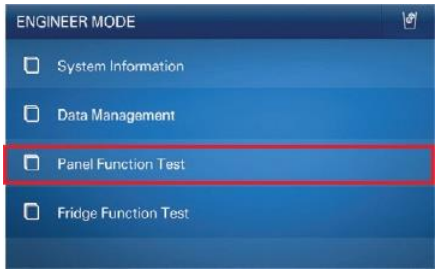
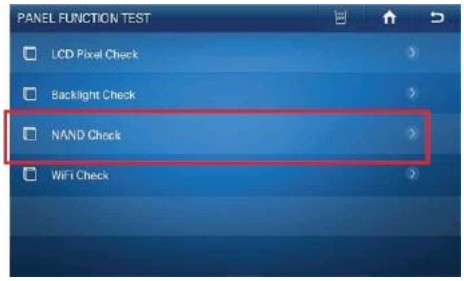
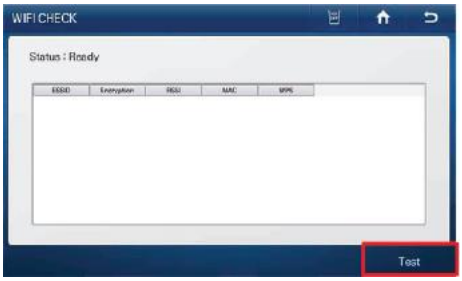
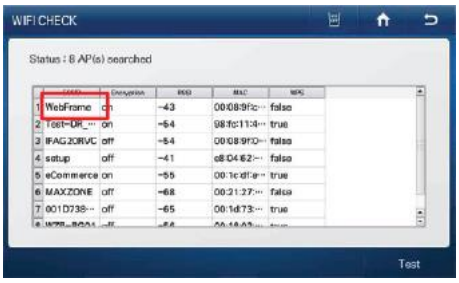
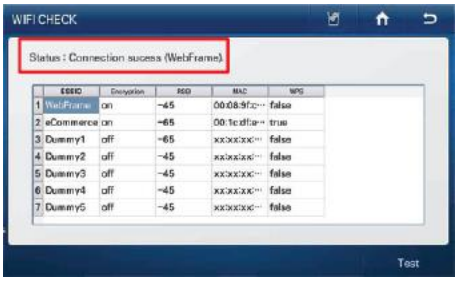
2. WiFi network status can be checked also.

Set the unit to “Engineer Mode” to perform both tests.

Sequence	Note
① Tap "A" and "B" area as sequence of “A-B-A-B-A-B” on the display screen within 3 seconds, "Engineer Mode enable” message will be displayed for 1 second on the popping up window and then disappear.	
② After the “Engineer Mode enabled "message been displayed, touch the "Settings" Icon, the Setting window will be displayed.	
③ Continue to touch the Down Arrow Icon to scroll down the list of the Setting window until see “Engineer Mode”. Tough the “Engineer Mode” to enter the Engineer Mode .	
④ Touch the "Fridge Function Test" from Engineer Mode window to enter the Fridge Function Test Mode.	
⑤ Touch the "Error History Check" Icon from the Fridge Function Test Mode window to enter the Error History Check Mode. ** There are up to 5 currently occurred errors can be seen from the Error History Checking Window.	

Error History Checking & WiFi Checking for LCD display style

To check the WiFi network status , follow the instruction that is listed on previous page to Set the unit to “Engineer Mode” first.

Sequence	Note
① Touch the "Panel Function Test“ from Engineer Mode window to enter the Panel Function Test Mode .	
② Touch the "WiFi Check" Icon from Panel Function Test Mode window to enter the WiFi Check Mode.	
③ Touch the "Test" Icon from right bottom of the WiFi Check Mode window to start WiFi Check.	
④Touch the ESSID of searched wireless AP from the WiFi Check Window to verify the WiFi Connection.	
⑤If the WiFi connection is good, the "Connection success" message will show on the screen.	

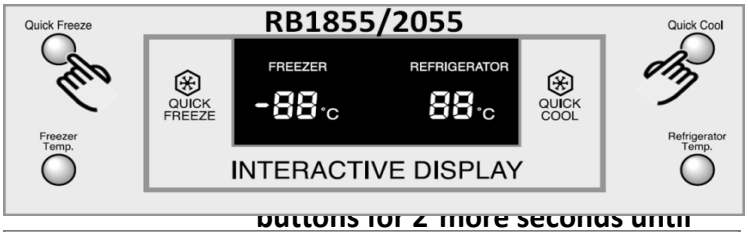
Self Diagnostic Mode for BMF 2 door style

RB1855/2055/ RB193/195/213/215
RB194/196/214/216, RL34***

Self Diagnostic Mode can be used to check for all sensors, fan motors, and defrost heater circuits.

Self Diagnostic Mode can be entered by the following 2 ways.

1. **With initial power on, unit will run the Self diagnostic automatically.**
2. **During any of the regular operation, hold down the following buttons simultaneously for 8 seconds to enter the Self Diagnostic Mode manually.**
   - **Quick Freeze + Quick Cool for RB1855/2055**
   - **Super Freeze + Super Cool for RB193/195/213/215**
   - **Power Freeze + Power Cool for RB194/196/214/216**
   - **Super Freeze + Alarm for RL34****



2-1) At the time of 6 seconds during the buttons been held down simultaneously, the entire display will seconds at the interval of holding the the

buttons for 2 more seconds until

2-2) Self Diagnosis function will be "Ding-Dong" sound. or code(s) will be displayed on the the applicable LED blink depends on models. (refer to list); if there is no error found during the Self either a blank screen or show "88" on left & depends on the models, and then return ("00" on left & "0" on right for B1855/2055)

display panel

to normal condition display.

2-3) When error is detected by self-diagnosis, the temperature control will be controlled by the emergency operation. The error message disappears after all troubled sensors and/or components have been corrected.

2-4) During self-diagnosis, all button inputs will not be recognized but only the canceling buttons.

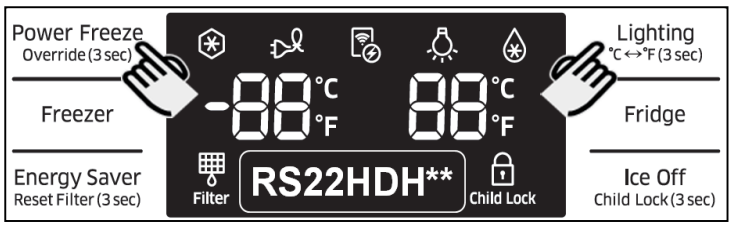
Self Diagnostic Mode for S*S Regular Display

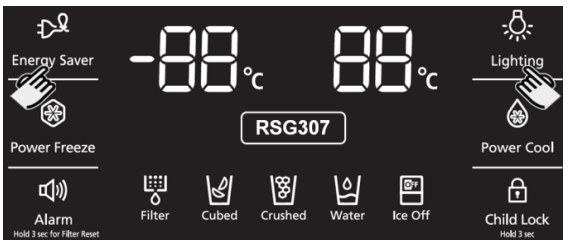
RS265/267TD, RSG257, RSG307, RH22H9010, RS22HDHPN
RS2555, RS253/257/265/267/269/275/277, RM255/257

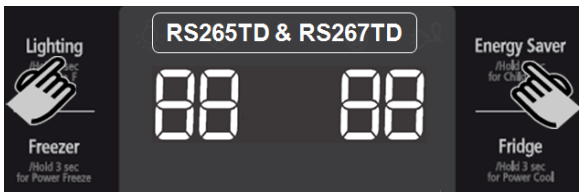
Self Diagnostic Mode can be used to check for all sensors, fan motors, and defrost heater circuits.

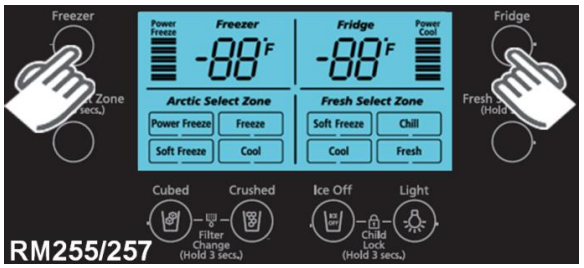
Self Diagnostic Mode can be entered by the following 2 ways.

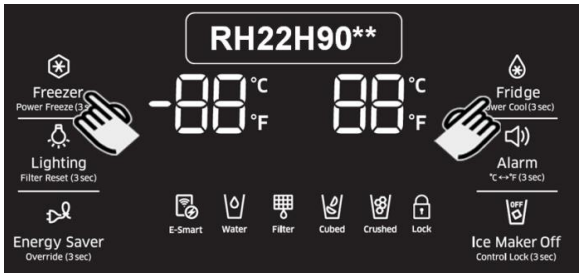
1. With initial power on, unit will run the Self diagnostic automatically.
2. During any of the regular operation, hold down the following buttons simultaneously for 8 seconds to enter the Self Diagnostic Mode manually.
   - **Freeze + Fridge for RM255/257, RH22H90****
   - **Power Freeze + Power Cool for RS2555, RSG257, RS255/257/267/269/277**
   - **Energy Saver + Lighting for RS265/267TDR, RSG307**
   - **Power Freeze + Lighting for RS22HDH*****

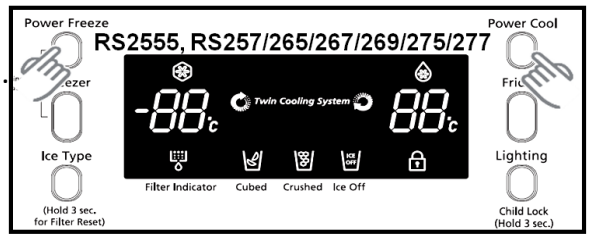












2-1) At the time of 6 seconds during the buttons been held down simultaneously, the entire display will blink for 2 seconds at the interval of 0.5 second, keep on holding the buttons for 2 more seconds until the self diagnostic mode been activated.

2-2) Self Diagnosis function will be activated with a "Ding-Dong" sound.
If there are any sensor, motor, or heater defect, the corresponding error code(s) will be displayed on the display panel, the applicable LED segment(s) will either light up or blink. (depends on models, refer to error code list); If there is no error found during the Self Diagnostic, the display should be either a blank screen or show "88" on left & "88" on right for 30 seconds depends on the models, and then return to normal condition display.

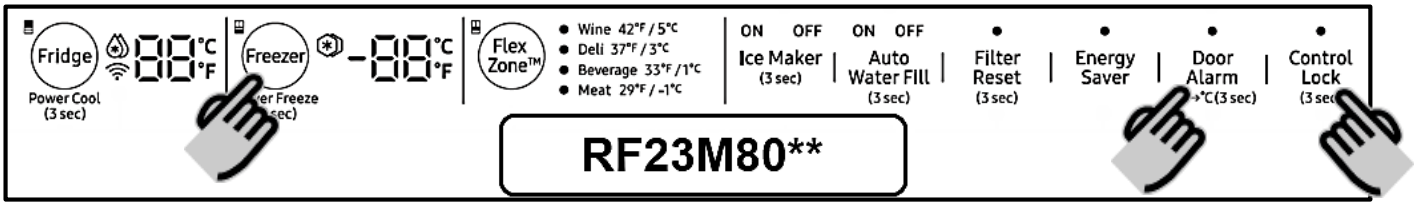
2-3) When error is detected by self-diagnosis, the temperature control will be controlled by the emergency operation. The error message disappears after all troubled sensors and/or components have been corrected.

2-4) During self-diagnosis, all button inputs will not be recognized but only the canceling buttons.

Manual Operation & Test Mode Part 1 for RF23M80*

Manual Operation & Test Mode can be used to force the unit to start or defrost.

Hold down **Freeze + Control Lock** buttons simultaneously for 6 seconds, the entire display will blink for 4 seconds at the interval of 0.5 second, press Control Lock button again while the display is blinking (4 second period), the Manual Operation & Test Mode will be activated.



- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).

Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, the unit will operate in the following sequence; Forced Operation 1 (FF) → Forced Operation 2 (r FF) → Forced Operation 3 (F FF) → Forced Operation 4 (A FF) → Forced defrost of all compartments (Fd) → Cancel (Displays turned off).

- All test modes can run for 24 hours maximum but the display will change back to normal display 20 seconds after entering the test mode. Alarm will beep constantly with various s ounds depending on the chosen test sequence steps. There is no way to stop the alarm during manual operation.

DISPLAY		Operating Time	Comp.	Fan				Valve	
Freezer	Fridge			Condenser	Freezer	Flex Zone	Refrigerator	F-VALVE	R-VALVE
FF	-	24Hr	ON	ON	ON (Except R room control time)	The temperature is controlled	The temperature is controlled	SWING	
FF	r	24Hr	ON	ON	OFF	OFF	ON	OFF	ON
FF	F	24Hr	ON	ON	ON	ON	ON	ON	OFF
FF	A	24Hr	ON	ON	ON	ON	ON	ON	ON

Manual Operation & Test Mode Part 1 for RF23M80*

Manual Operation / Test Sequence Chart

1. Forced Operation Mode

1-1) Press either Freezer or Fridge Keys once in Manual Operation Mode, display will blink "FF" and this indicates that the unit has entered the Forced Operation Mode 1, the Comp. and the F-Fan continues to operate for 24 hours, and the R Compartment will work by the set temperature.

1-2) Press either Freezer or Fridge Keys twice in Manual Operation Mode, display will blink “r FF” and this indicates that the unit has entered the Forced Operation Mode 2, the F-Valve will be closed, and the F-Fan will be OFF.

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1-3) Press either Freezer or Fridge Keys 3 times in Manual Operation Mode, display will blink “F FF” and this indicates that the unit has entered the Forced Operation Mode 3, the R-Valve will be closed, and the R-Fan will be OFF.

1-4) Press either Freezer or Fridge Keys 4 times in Manual Operation Mode, display will blink “A FF” and this indicates that the unit has entered the Forced Operation Mode 4, the Comp. and all Fans continues to operate for 24 hours.

Once the Forced Operation Modes are selected (“FF”, “r FF”, “F FF” and “A FF”), Compressor(s) will run at once at full speed (3600 RPM) without 7 minutes delay. Compressor(s), and related fan(s) will operate continuously until all compartments reach the lowest temperature setting.
Forced Operation Modes will run for 24 hours then unit will back to normal operation. During the Forced Operation Modes, all compartments will be controlled by the lowest temperature setting. Freezer compartment -8°F(-23°C), Fridge compartment 34°F(1°C).

2. Forced Defrost Mode

Press either Freezer or Fridge Keys four times in Manual Operation Mode within 15 seconds, display will blink “Fd” and this indicates the refrigerator has entered the Forced Defrost Mode for all compartments.
All compartments will be defrosted.

3. Cancellation

To change/cancel a test step, follow below procedures:

Hold down Freeze + Control Lock buttons simultaneously for 6 seconds, the entire display will blink for 4 seconds at the interval of 0.5 second, press Control Lock button again while the display is blinking (4 second period), testing modes will be displayed. Press either Freezer or Fridge Keys to choose the desired t est step or to cancel the test mode within 15 seconds.

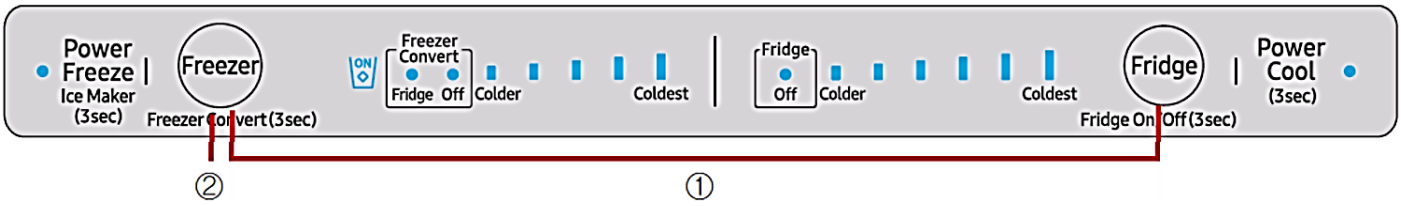
Or simply unplug the power cord, then plug it back, unit will return to normal operation.

Manual Operation & Test Mode Part 2 for TMF

RT18/21M621* TMF Refrigerator

Manual Operation & Test Mode can be used to force the unit to start or defrost.

Hold down **Freeze + Fridge** buttons simultaneously for 4 seconds, the entire display will blink for 3 seconds at the interval of 0.5 second, press **Freezer** button again while the display is blinking (3 second period), the Manual Operation Mode will be activated.



- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).

Press either Freezer or Fridge key once ~ six times on the control panel within 15 seconds after entering the Test Mode, the unit will operate in the following sequence; Forced Operation 1 (All) → Forced Operation 2 (R-Valve/Fan Off) → Forced Operation 3 (F-Valve/Fan OFF) → Forced R defrost for fridge compartment only (R) → Forced F / R defrost of all compartments (F / R) → Cancel (Displays turned off, back to normal operation after 15 seconds.)

- All test modes can run for 24 hours maximum but the display will change back to normal display 20 seconds after entering the test mode.
- Alarm will beep constantly with various sounds depending on the chosen test sequence steps. There is no way to stop the alarm during manual operation.

1. Forced Operation Mode

1-1) Press either Freezer or Fridge Keys once in Manual Operation Mode, All temperature display LED bars of both freezer and fridge compartment (F1 ~ F5 and R1 ~ R6) will light up and this indicates that the unit has entered the Forced Operation 1 mode, the Comp. and the F-Fan continues to operate for 24 hours, and the R Compartment will work by the set temperature.

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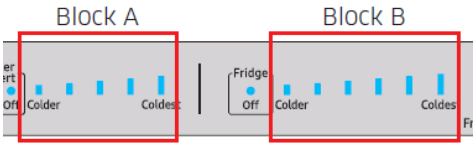
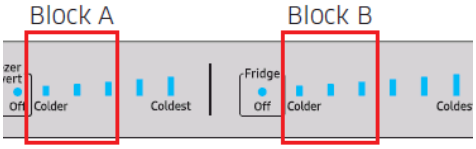
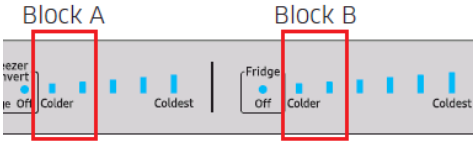


1-2) Press either Freezer or Fridge Keys twice in Manual Operation Mode, the temperature display LED bars of both freezer and fridge compartment (F1 ~ F3 and R1 ~ R3) will light up and this indicates that the unit has entered the Forced Operation 2 mode, the R-Valve will be closed, and the R-Fan will be OFF.



1-3) Press either Freezer or Fridge Keys three times in Manual Operation Mode, the temperature display LED bars of both freezer and fridge compartment (F1 ~ F2 and R1 ~ R2) will light up and this indicates that the unit has entered the Forced Operation 3 mode, the Comp. and the R-Fan will continuously work for 24 hours, the F-Valve will be closed, and the F-Fan will be OFF.



Manual Operation & Test Mode Part 2 for TMF

RT18/21M621* TMF Refrigerator

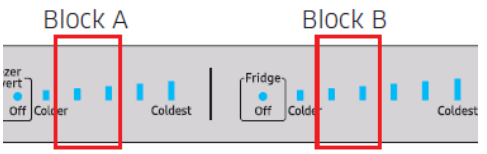
Manual Operation / Test Sequence Chart

DISPLAY		Operating Time	Comp.	Fan			Valve	
Freezer	Fridge			C	F	R	F-VALVE	R-VALVE
F1 ~ F5	R1 ~ R6	24Hr	ON	ON	ON(Except R room control time)	The temperature is controlled	SWING	
F1 ~ F3	R1 ~ R3	24Hr	ON	ON	ON	OFF	ON	OFF
F1 ~ F2	R1 ~ R2	24Hr	ON	ON	OFF	ON	OFF	ON

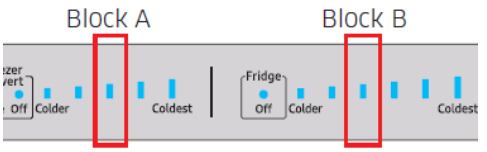
Once the Forced Operation Modes are selected, Compressor(s) will run at once at full speed (3600 RPM) without 10 minutes delay. Compressor(s), and related fan(s) will operate continuously until all compartments reach the lowest temperature setting.
Forced Operation Modes will run for 24 hours then unit will back to normal operation. During the Forced Operation Modes, all compartments will be controlled by the lowest temperature setting. Freezer compartment -8°F(-23°C), Fridge compartment 34°F(1°C).

2. Forced Defrost Mode

2-1) Press either Freezer or Fridge Keys four times in Manual Operation Mode within 15 seconds, The temperature display LED bars of both freezer and fridge compartment (F2 ~ F3 and R2 ~ R3) will light up and this indicates that the unit has entered the Forced R Defrost Mode, the fridge compartment will be defrosted.



2-2) Press either Freezer or Fridge Keys five times in Manual Operation Mode within 15 seconds, The temperature display LED bars of both freezer and fridge compartment (F3 and R3) will light up and this indicates that the unit has entered the Forced F/R Defrost Mode, both freezer and fridge compartments will be defrosted.



3. Cancellation

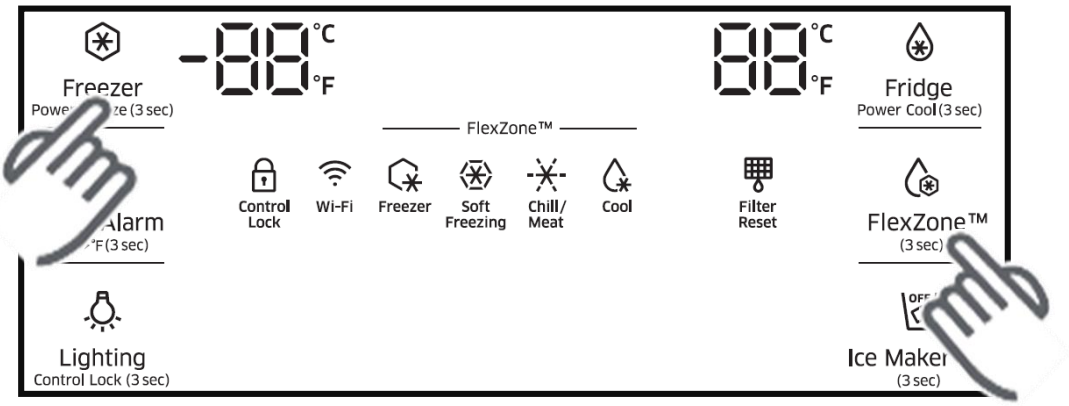
To change/cancel a test step, hold down Freeze + Fridge Keys simultaneously for 4 seconds, the entire display will blink for 3 seconds at the interval of 0.5 second, press Freezer button again while the display is blinking (3 second period), testing modes will be displayed. Press either Freezer or Fridge Keys to choose t he desired test step or to cancel the test mode within 15 seconds.

Or simply unplug the power cord, then plug it back, unit will return to normal operation.

Manual Operation & Test Mode Part 3 for RF28K9070**

Manual Operation & Test Mode can be used to force the unit to start or defrost.

Hold down **Freeze + Flex Zone** buttons simultaneously for 8 seconds to enter the Test Mode.



- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).

Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, the unit will operate in the following sequence: Forced Operation (FF) → Fridge Room ON Forced Operation (FF r) → Freezer Room ON Forced Operation (FF F) → CV Room ON Forced Operation (FF C) → Forced Defrosting (Fd)→ Cancel (Displays turned off).

- All test modes can run for 24 hours maximum but the display will change back to normal display 20 seconds after entering the test mode. Alarm will beep constantly with various s ounds depending on the chosen test sequence steps. There is no way to stop the alarm during manual operation.

DISPLAY		Operating Time	Operation					
Freezer	Fridge		F-Fan (Freezer)	R-Fan (Fridge)	CV-Fan (FlexZone)	F Valve	R Valve	CV Valve
FF		24hr	ON	The temperature is controlled	ON	Swing	Swing	Swing
FF	r	24hr	ON	ON	ON	OFF	ON	OFF
FF	F	24hr	ON	ON	ON	ON	OFF	OFF
FF	C	24hr	ON	ON	ON	OFF	OFF	ON

Manual Operation & Test Mode Part 3 for RF28K9070**

1. Forced Operation Mode

1-1) Press either Freezer or Fridge Keys once in Manual Operation Mode, display will blink "FF" and this indicates that the unit has entered the Forced Operation Mode 1, the Comp. the F-Fan and the CV-fan continues to operate for 24 hours, and the R-Fan (Fridge Compartment) will work by the set temperature.

1-2) Press either Freezer or Fridge Keys twice in Manual Operation Mode, display will blink “FF r” and this indicates that the unit has entered the Forced Operation Mode 2, Compressor and all fans continues to operate for 24 hours, the F-Valve and CV-Valve will be closed. The R Valve is open.

1-3) Press either Freezer or Fridge Keys 3 times in Manual Operation Mode, display will blink “FF F” and this indicates that the unit has entered the Forced Operation Mode 3, , Compressor and all fans continues to operate for 24 hours, the R-Valve and CV-Valve will be closed. The F Valve is open.

1-4) Press either Freezer or Fridge Keys 4 times in Manual Operation Mode, display will blink “A FF” and this indicates that the unit has entered the Forced Operation Mode 4, Compressor and all fans continues to operate for 24 hours, the F-Valve and R-Valve will be closed. The CV Valve is open.

Once the Forced Operation Modes are selected (“FF”, “r FF”, “F FF” and “C FF”), Compressor will run at once at full speed without 10 minutes delay. Compressor, and related fan(s) will operate continuously until all compartments reach the lowest temperature setting.
Forced Operation Modes will run for 24 hours then unit will back to normal operation. During the Forced Operation Modes, all compartments will be controlled by the lowest temperature setting. Freezer compartment -8°F(-23°C), Fridge compartment 34°F(1°C).

2. Forced Defrost Mode

2-1) Press either Freezer or Fridge Keys five times in Manual Operation 15 seconds, display will blink “Fd” and this indicates the refrigerat Forced Defrost Mode for all compartments.
All compartments will be defrosted.

3. Cancellation

To change/cancel a test step, follow below procedures:

Hold down Freeze + Flex Zone buttons simultaneously for 8 seconds, the testing modes will be displayed. Press either Freezer or Fridge Keys to choose the desired test step or to cancel the test mode within 15 seconds.

Or simply unplug the power cord, then plug it back, unit will return to normal operation.

- If no key is pressed within 15 seconds after entering test mode, the test will be cancelled and unit will return to normal operation.

Manual Operation & Test Mode Part 4

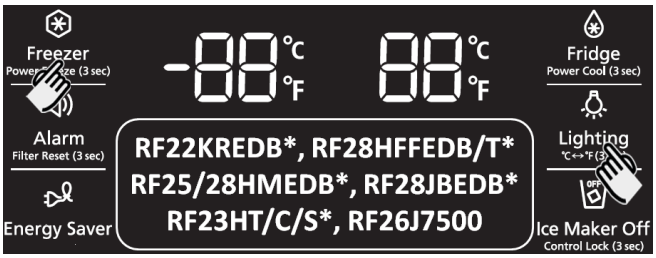
RF260/261*, RF26HF*, RS22HD*
RF263BE*, RFG297HD*, RFG29PH*, RF323TE*, RF4267*, RF24/31FM* RF22KR,
RF23HT*, RF23HC*, RF23HS*, RF28HF*,
RF25HM*, RF28HM*, RF28JB* RF30HB*, RF26J7500*

Manual Operation & Test Mode can be used to force the unit to start or defrost. Hold down the following buttons simultaneously for 8 seconds to enter the Mode.

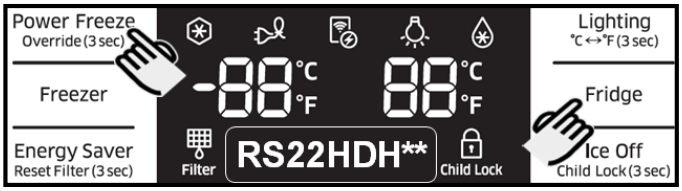
- **Energy Saver + Fridge for RF263BE, RFG297HD, RFG29PH, RF323TED RF4267 , RF24/31FM, RF30HB***
- **Power Freeze + Fridge for RF260/261, RS22HDH, RF26HFEND***
- **Freeze + Lighting for RF22KR, RF23HT*, RF23HC*, RF23HS*, RF28HF*, RF25HM*, RF28HM*, RF28JB*, RF26J7500, RF22K****

Press Freezer/or Fridge Key once during Test Mode to start the **Forced Operation 1. "FF"**

Press Freezer/or Fridge Key twice during the Test Mode to start **the Forced Operation 2. "oF-r"**



Press Freezer/or Fridge Key 3 times during the Test Mode to start **the Forced Defrost for fridge section only. "rd"**



Press Freezer/or Fridge Key 4 times during Test Mode **Forced Defrost for both freezer and fridge compartments. "Fd"**

Press Freezer/or Fridge Key one more time for cancellation Test Mode

Manual Operation & Test Mode Part 4

- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).
- Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, the unit will operate in the following sequence; Forced Freezing 1 (FF) → Forced Freezing 2 (oF r) → Forced defrost of refrigerator (rd) → Forced defrost of both freezer & refrigerator (Fd) → Cancel (Displays turned off).
- All test modes can run for 24 hours maximum but the display will change back to normal display 20 second s after entering the test mode. Alarm will beep constantly with various sounds depending on the chosen te st sequence steps. There is no way to stop the alarm during manual operation.

1. Forced Freezing Mode

1-1) Press either Freezer or Fridge Keys once in Manual Operation Mode, display will bli this indicates that the refrigerator has entered the First Forced Freezing Mode. The ste M) operates at normal position and both fridge and freezer are operating.

1-2) Press either Freezer or Fridge Key twice in Manual Operation Mode, will blink “OF r” and this indicates that the refrigerator has entered Forced Freezing Mode. The step valve (TDM) operates at bypass position, only fre ezer section is operating. Refrigerator section is bypassed, and the refrigerator evaporator and fan will not operate.

Once the Forced Freezing Mode is selected (“FF” or “OF r”), Compressor will run at once at full speed (3600 RPM) without 7 minutes delay. Compressor, and related fans will operate continuously until the freezer reaches the lowest temperature setting.

FF mode will run for 24 hours then unit will back to normal operation. During the FF Mode, both freezer and fresh food compartment will be controlled by the lowest temperature setting. Freezer compartment -14℉(-25℃), Fridge compartment 32℉(1℃).

2. Forced Defrost Mode

2-1) Forced Defrost Mode (fridge only)

Press either Freezer or Fridge Keys 3 times in Manual Operation Mode within display will blink “rd” and this indicates the refrigerator has entered the Forced Defrost Mode for fridge section. Fridge compartment only will be defrosted.

2-2). Forced Defrost Mode (both fridge and freezer)

Press either Freezer or Fridge Keys four times in Manual Operation Mode within 15 seconds, display will blink “Fd” and this indicates the refrigerator has entered the Forced Defrost Mode for both fridge and freezer. Both fridge and freezer compartments will be defrosted.

3. Cancellation

To change/cancel a test step, hold down the following buttons simultaneously for 8 seconds again,

- Energy Saver + Fridge for RF263BE, RFG29*, RF323TE, RF4267, RF24/31FM, RF30HB*
- Power Freeze + Fridge for RF260/261, RS22HDH, RF26HFEND*
- Freeze + Lighting for RF22KR, RF23HT*, RF23HC*, RF23HS*, RF28HF*, RF25HM*, RF28HM* RF28JB*, RF26J7500

testing modes will be displayed. Press either Freezer or Fridge Keys to choose the desired test step or to cancel the test mode within 15 seconds.

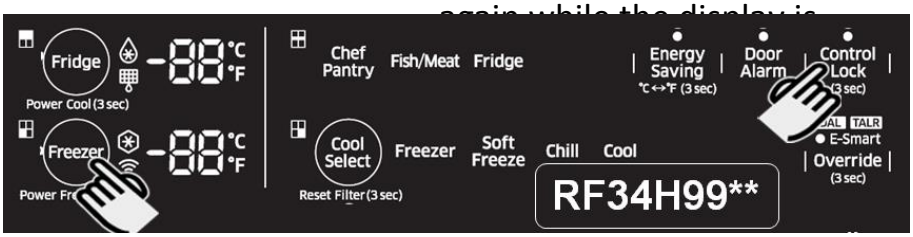
Or simply unplug the power cord, then plug it back, unit will return to normal operation.

Manual Operation & Test Mode Part 5

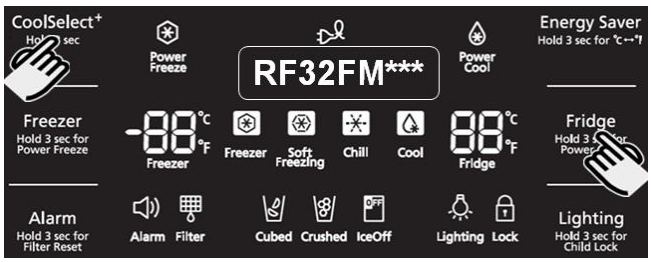
RF32FMQDB*, RF34H9960S4, RF23J9011*

Manual Operation & Test Mode can be used to force the unit to start or defrost.

- For **RF32FMQDBSR**, hold down **CoolSelect+ & Fridge** buttons simultaneously for 8 seconds to enter the Mode.
- For **RF23J9011SR,** hold down **CoolSelect+ & Freezer** buttons simultaneously for 8 seconds to enter the Mode.
- For **RF34H9960S4**, hold down **Freeze + Control Lock** buttons simultaneously for 6 seconds, the entire display will blink for 4 seconds at the interval of 0.5 second, press Control Lock button again while the display is blinking (4 second period), Manual Operation & Test Mode will be activated.

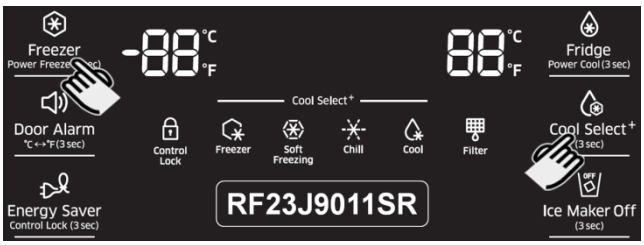


Press Freezer/or Fridge Key once during Test Mode to start the **Forced Operation 1. "FF"**



Press Freezer/or Fridge Key twice during the Test Mode to start **the Forced Operation 2. "OF-c"**

Press Freezer/or Fridge Key 3 times during the Test Mode to start **the Forced Operation 3 for both compressors. "Fr"**



Press Freezer/or Fridge Key 4 times during Test Mode **Forced Defrost for all compartments. "Fd"**

Press Freezer/or Fridge Key one more time for cancellation Test Mode

- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).

Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, the unit will operate in the following sequence; Forced Operation 1 (FF) → Forced Operation 2 (OF-c) → 2 Compressors Simultaneous Forced Operations (Fr) → Forced defrost of all compartments (Fd) → Cancel (Displays turned off).

- All test modes can run for 24 hours maximum but the display will change back to normal display 20 seconds after entering the test mode. Alarm will beep constantly with various sounds depending on the chosen test sequence steps. There is no way to stop the alarm during manual operation.

Manual Operation & Test Mode Part 5

RF32FMQDB*, RF34H9960S4, RF23J9011*

1. Forced Operation Mode

1-1) Press either Freezer or Fridge Keys once in Manual Operation Mode, display will blink "FF" and this indicates that the unit has entered the First Forced Operation Mode. The step valve (TDM) operates at normal position and both CoolSelect Room and freez er are operating.

1-2) Press either Freezer or Fridge Keys twice in Manual Operation Mode, display will blink “OF c” and this indicates that the unit has entered the Second Forced Operation Mode. The step valve (TDM) operates at bypass position, only freezer section is operating. CoolSelect Room section is bypassed, the CoolSelect Room evaporator and fan will not operate.
The Second Forced Operation (OF c) is to check the step valve (TDM).

1-3) Press either Freezer or Fridge Keys 3 times in Manual Operation Mode, display will blink “Fr” and this indicates that the unit has entered the third Forced Operation Mode. Both compressors will operate, the step valve (TDM) operates at normal position, All compartments (Fridge, CoolSelect Room, and freezer) are operating.

Once the Forced Operation Modes are selected (“FF”, “OF c”, and “Fr”), Compressor(s) will run at once at full speed (3600 RPM) without 10 minutes delay. Compressor(s), and related fan(s) will operate continuously until all compartments reach the lowest temperature setting.
Forced Operation Modes will run for 24 hours then unit will back to normal operation. During the Forced Operation Modes, all compartments will be controlled by the lowest temperature setting. Freezer compartment -14°F(-25°C), Fridge compartment 32°F(1°C).

2. Forced Defrost Mode

2-1) Press either Freezer or Fridge Keys four times in Manual Operation 15 seconds, display will blink “Fd” and this indicates the refrigerato Forced Defrost Mode for all compartments.
All compartments will be defrosted.

3. Cancellation

To change/cancel a test step, follow below procedures:

- For RF32FMQDBSR, hold down CoolSelect + Fridge buttons simultaneously for 8 seconds,
- For RF23J9011SR, hold down CoolSelect+ & Freezer buttons simultaneously for 8 seconds
- For RF34H9960S4, hold down Freeze + Control Lock buttons simultaneously for 6 seconds, the entire display will blink for 4 seconds at the interval of 0.5 second, press Control Lock button again while the display is blinking (4 second period),

testing modes will be displayed. Press either Freezer or Fridge Keys to choose the desired test step or to cancel the test mode within 15 seconds.

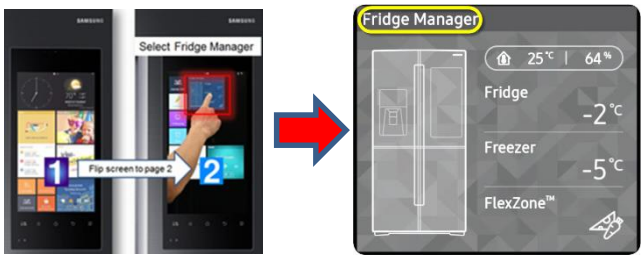
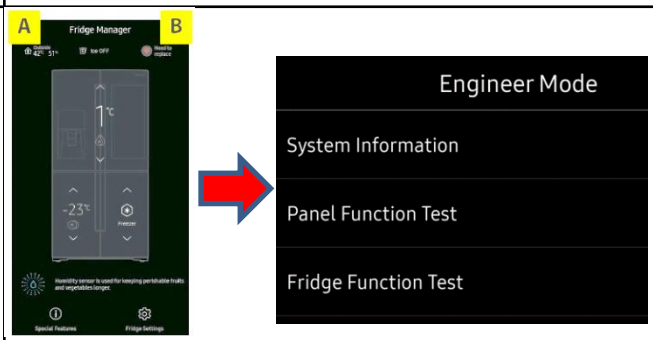
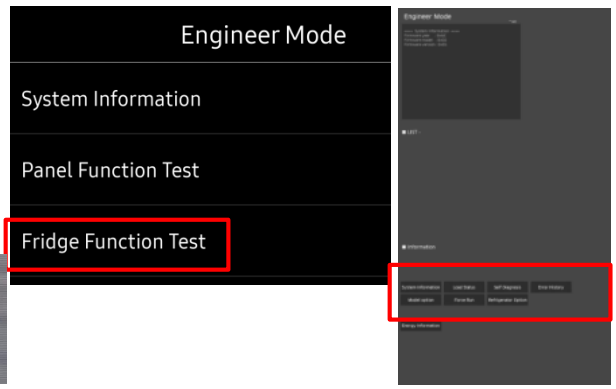
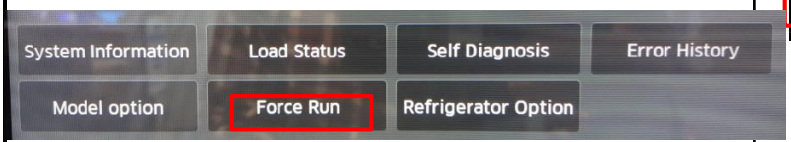
Or simply unplug the power cord, then plug it back, unit will return to normal operation.

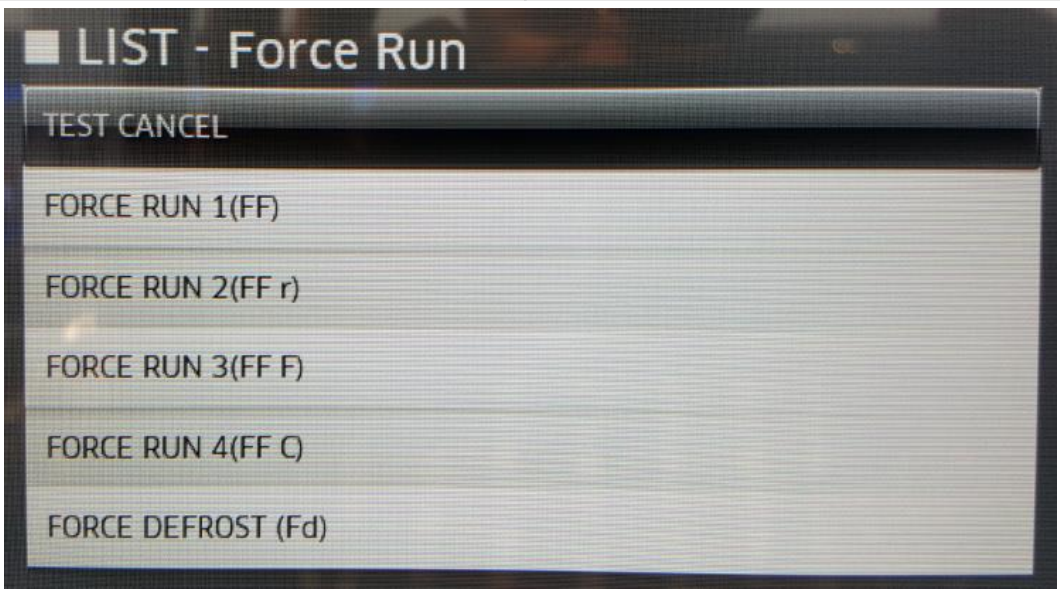
- If no key is pressed within 15 seconds after entering test mode, the test will be cancelled and unit will return to normal operation.

Manual Operation & Test Mode Part 6 for family hub

RF28K95**, RF265B**, RF22M9581**

Manual Operation & Test Mode can be used to force the unit to start or defrost.

Sequence	Note
① Swipe the Home screen to the left to see the second display screen. Tap “Fridge Manager” to set the unit to the Fridge Manager Home Page. (The fridge temperature and options are displayed)	
② Tap "A" and "B" area as sequence of “A-B-A-B-A-B” on the display screen within 3 seconds, "Engineer Mode enable” message will be displayed as the popping up message and the display will change to the “Engineer Mode”.	
③Tap “Fridge Function Test” and then tap “Force Run” from the pop up screen to enter the Manual Operation & Test Mode. Tap the “Force Run 1, 2, 3, 4” or “Force Defrost” from the pop up screen list to do the test.	 



Manual Operation & Test Mode Part 6 for family hub

Sequence	Note
④ To run compressor manually, tap the “Force Run 1 (FF)”, or “Force Run 2 (FF r)”, or “Force Run 3 (FF F)”, or “Force Run 4 (FF c)” from the “Force Run List” to choose the desired test. The selected test will run automatically. Alarm will beep constantly with various sounds depending on the cho sen test. There is no way to stop the alar m during manual operation.	

Manual Operation / Test Sequence Chart

DISPLAY		Operating Time	Operation					
			F-Fan (Freezer)	R-Fan (Fridge)	CV-Fan (FlexZone)	F Valve	R Valve	CV Valve
FF		24hr	Continuous operation	The temperature is controlled	Continuous operation	Swing	Swing	Swing
FF	r	24hr	Continuous operation	Continuous operation	Continuous operation	OFF	ON	OFF
FF	F	24hr	Continuous operation	Continuous operation	Continuous operation	ON	OFF	OFF
FF	C	24hr	Continuous operation	Continuous operation	Continuous operation	OFF	OFF	ON

Manual defrost

⑤ To run the Manual defrost, tap the “Force Defrost (Fd)” from the “Force Run List”, all compartments will be defrosted automatically. Alarm will beep constantly during the Manual defrost. There is no way to stop the alarm during manual operation.

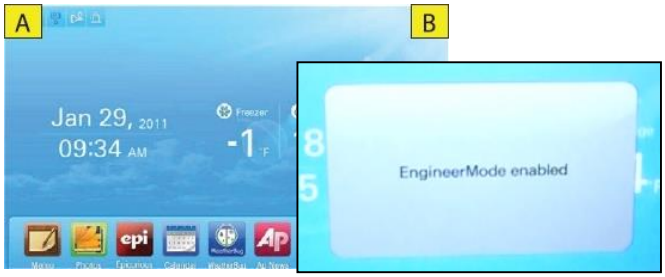
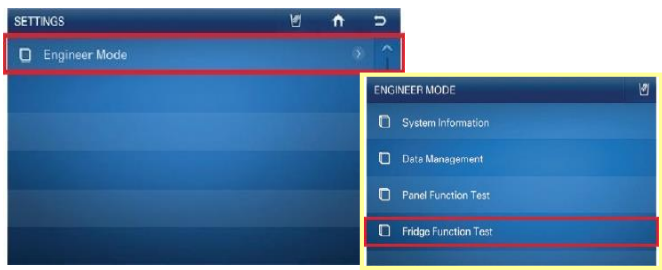
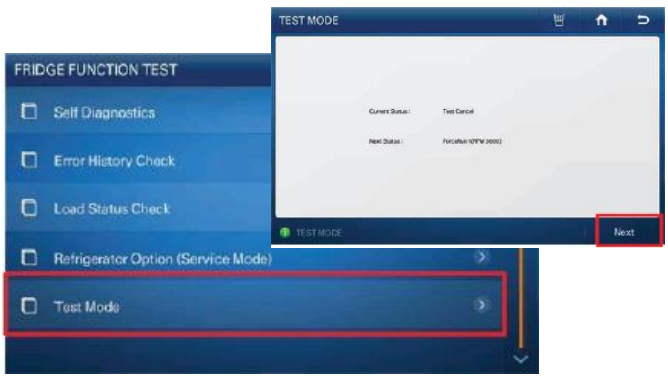
Cancellation

Tap the “TEST CANCLE” from the “Force Run List”, the test function will be canceled.

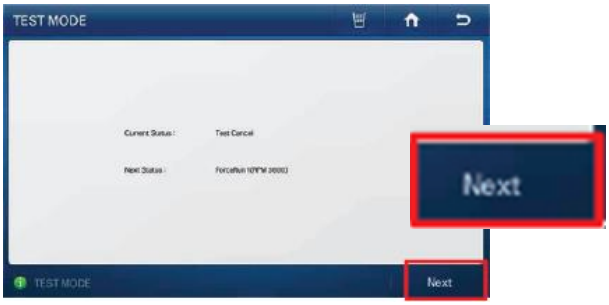
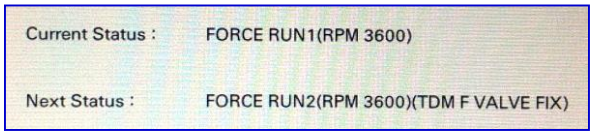
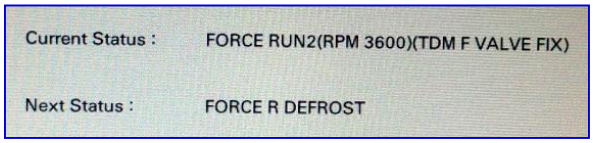
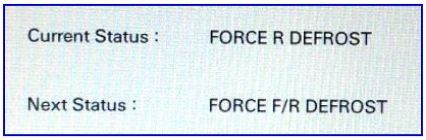
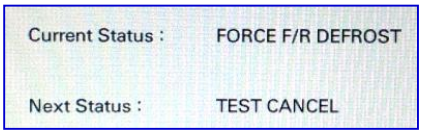
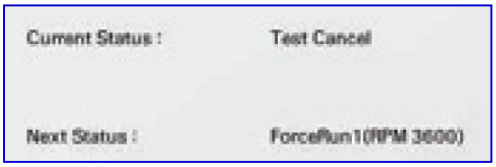
Manual Operation & Test Mode Part 7 for LCD panel style

RF4289HB, RS27FD, RF28HMEL**

Manual Operation & Test Mode can be used to force the unit to start or defrost.

Sequence	Note
① Tap "A" and "B" area as sequence of "A-B-A-B-A-B" on the display screen within 3 seconds, "Engineer Mode enable" message will be displayed for 1 second on the popping up window and then disappear.	
② After the "Engineer Mode enabled" message been displayed, touch the "Settings" Icon, the Setting window will be displayed.	
③ Continue to touch the Down Arrow Icon to scroll down the list of the Setting window until see "Engineer Mode", tough the "Engineer Mode" to enter the Engineer Mode .	
④ Touch the "Fridge Function Test" from Engineer Mode window to enter the Fridge Function Test Mode.	
⑤ Touch the "Test Mode" from "Fridge Function Test" window to enter the Test Mode. Once entering the test mode, the current test status and the next available test will be shown on the Test Mode Window. e.g. the current test status is "Test Cancel" and the nest available test status is "Force Run 1 at 3600 RPM"	

Manual Operation & Test Mode Part 7 for LCD panel style

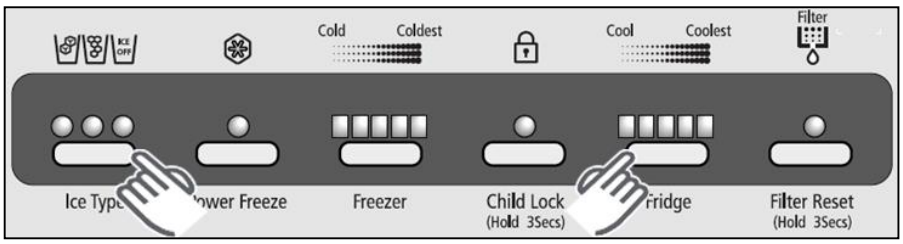
Sequence	Note
⑥ Touch the "Next" Icon to choose the desired test. The selected test will run automatically. Alarm will beep constantly with various sounds depending on the chosen test sequence steps. There is no way to stop the alarm during manual operation. ※ Operating Sequence of the tests when the “Next” Icon been touched are: ForceRun 1 (RPM 3600) → ForceRun 2 (RPM 3600):(TDM F valve Fix) → Force R Defrost → Force F/R Defrost → Test Cancel → ForceRun 1 (RPM 3600) ...	
Manual operation function Force Run 1 (RPM 3600), Force Run 2 (RPM 3600):(TDM F valve Fix) If any of the Forced Freezing Modes are selected Compressor will run at once at full speed (3600 RPM) without 5 minutes delay. Compressor, and all fans will operate continuously until the freezer reaches the lowest temperature setting. Test mode will run for 24 hours then unit will back to normal operation. During the Manual Operation Mode, both freezer and fresh food compartment will be controlled by the lowest temperature setting. Freezer compartment -14°F(-25°C), Fridge compartment 32°F(1°C). For Force Run 2 (RPM 3600):(TDM F valve Fix) Mode, the step valve (TDM) will operate at bypass position, only freezer section is operating. Refrigerat or section is bypassed, and the refrigerator evapor ator and fan will not operate.	 
Manual defrost Once the Manual Defrost Mode is selected (“rd”, “Fd” for non LCD display models), Force R Defrost (Refrigerator only), Force F/R Defrost (Both Sections) Fridge compartment only or both fridge and freezer compartments will be defrosted.	 
Cancellation Touch the "Next" Icon from any test modes until the “Test Cancel” message is showing on the display and the test mode will be canceled. Or, all test modes will be canceled by turning main power OFF.	

Manual Operation & Test Mode Part 8 for LED bar display

RS2630/2530, RF220/221, & RL220/221

Manual Operation & Test Mode can be used to force the unit to start or defrost. Hold down the following buttons simultaneously for 8 seconds to enter the Mode.

- **Ice Type+ Fridge for RS2530/2630**
- **Freezer + Alarm for RF220/221**



Forced Operation	→	***Forced Defrost for Freezer***	→	***Cancellation***
Press Freezer/or Fridge Key once during Test Mode		Press Freezer/or Fridge Key twice during the Test Mode		Press Freezer/or Fridge Key 3 times to cancel the test

- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).
- Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, unit will operate in the following sequence; Forced Freezing → Forced Defrost → Cancel (Displays turned off).
- All test modes can run for 24 hours maximum but the display will change back to normal display 20 seconds after entering the test mode. Alarm will beep constantly with various sounds depending on the chosen test sequence steps. There is no way to stop the alarm during manual operation.

To change / cancel a test step, hold down the following buttons simultaneously for 8 seconds again,

- Ice Type + Fridge for RS2530/2630
- Ice Off + Fridge for RF220/221

testing modes will be displayed. Press either Freezer or Fridge Keys to choose the desired test step or to cancel the test mode within 15 seconds.

Or simply unplug the power cord, then plug it back, unit will return to normal operation.

- If no key is pressed within 15 seconds after entering test mode, the test will be cancelled and unit will return to normal operation.

Manual Operation & Test Mode Part 9

RF18HFEND*, RF20HFEND*

Manual Operation & Test Mode can be used to force the unit to start or defrost. Hold down the Power Freeze + Fridge buttons simultaneously for 8 seconds to enter the Mode.

Press Freezer/or Fridge Key once during the Test Mode to start the Forced Operation 1. “FF-1”

Press Freezer/or Fridge Key twice during the Test Mode to start the Forced Operation 2. “FF-2”

Press Freezer/or Fridge Key 3 times during the Test Mode to start the Forced Operation 3. “FF-3”

Press Freezer/or Fridge Key 4 times during the Test Mode to start the Forced Defrost for fridge section only. “rd”

Press Freezer/or Fridge Key 5 times during Test Mode to start Forced Defrost for both freezer and fridge compartments. “Fd”

Press Freezer/or Fridge Key one more time for cancellation the Test Mode

- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).
- Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, the unit will operate in the following sequence; Forced Freezing 1 (FF-1) → Forced Freezing 2 (FF-2) → Forced Freezing 3 (FF-3)→ Forced defrost of the refrigerator section only (rd) → Forced defrost of both freezer & refrigerator (Fd) → Cancel (Displays turned off).
- All test modes can run for 24 hours maximum but the display will change back to normal display after 20 seconds. Alarm will beep constantly with various sounds depending on t he chosen test sequence steps. There is no way to stop the alarm during manual operatio n.

Manual Operation & Test Mode Part 9

RF18HFEND*, RF20HFEND*

1. Forced Freezing Mode

For the units that equipped with an inverter compressor, there are 3 Forced Freezing Modes and the inverter (3 speed) compressor will run at different speed at different mode.

1-1. Forced Freezing Mode 1 (FF-1)

Press either Freezer or Fridge keys once in Manual Operation Mode, display will blink “FF-1” and this indicates that the refrigerator has entered the first Forced Freezing Mode and the compressor (full speed).

1-2. Forced Freezing Mode 2 (FF-2)

Press either Freezer or Fridge keys twice in Manual Operation Mode, display will blink “FF-2” and this indicates that the refrigerator has entered the second Forced Freezing Mode and the RPM (mid speed).

1-3. Forced Freezing Mode 3 (FF-3)

Press either Freezer or Fridge keys three times in Manual Operation Mode, display will blink “FF-3” and this indicates that the refrigerator has entered the third Forced Freezing Mode and the RPM (low speed).

Once the Forced Freezing Mode is selected (FF-1, FF-2, FF-3), ccompressor will start to run at once without 5 minutes delay. Compressor, and all fans will operate continuously until the freezer reaches the lowest temperature setting. Forced Freezing Mode will run for 24 hours then unit will back to normal operation. During the Forced Freezing Mode , both freezer and fresh food compartment will be controlled by the lowest temperature setting. Freezer compartment -14℉ (-25℃), Fridge compartment 32℉ (1℃).

2. Forced Defrost Mode

2-1) Forced Defrost Mode (fridge only)

Press either Freezer or Fridge Keys four times in Manual Operation Mode within 15 seconds, display will blink “rd” and this indicates the refrigerator has entered the Forced Defrost Mode for fridge section.

Fridge compartment only will be defrosted.

2-2). Forced Defrost Mode (both fridge and freezer)

Press either Freezer or Fridge Keys three times in Manual Operation Mode within 15 seconds, display will blink “Fd” and this indicates the refrigerator has entered the Forced Defrost Mode for both fridge and freezer.

Both fridge and freezer compartments will be defrosted.

To change/cancel a test step, hold down Power Freeze + Fridge buttons simultaneously for 8 Seconds again, testing modes will be displayed. Press either Freezer or Fridge Keys to choose the desired test st ep or to cancel the test mode within 15 seconds.

Or simply unplug the power cord, then plug it back, unit will return to normal operation.

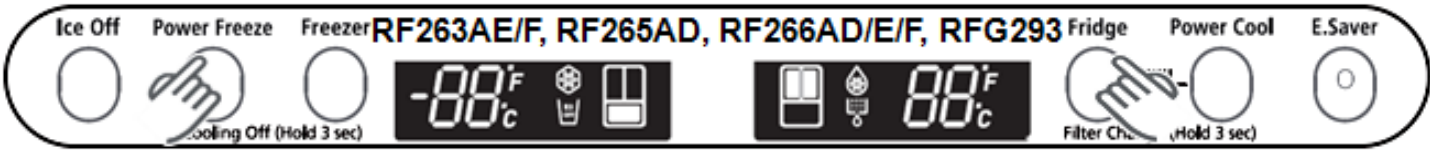
- If no key is pressed within 15 seconds after entering test mode, the test will be cancelled and unit will r eturn to normal operation.

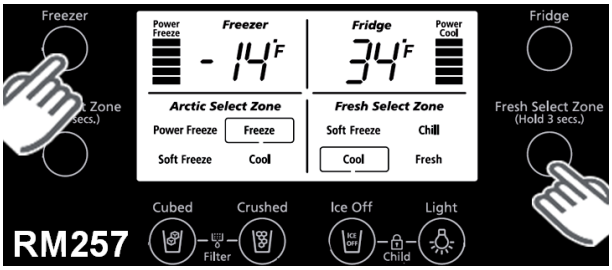
Manual Operation & Test Mode Part 10

RM257, RSG257, RSG307, RS265/267TD, RF4287, RF263AE/AF, RF265AD, RF266AD/AE/AF, RF267AE/AF/AZ, RFG237/293/295/297AA/AB/AC

Manual Operation & Test Mode can be used to force the unit to start or defrost. Hold down the following buttons simultaneously for 8 seconds to enter the Mode.

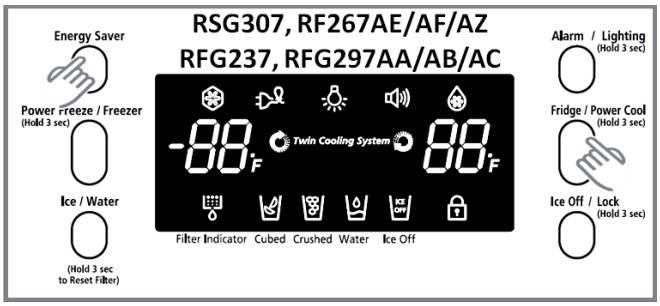
- Freezer + Fridge for RM257
- Energy Saver + Fridge for RSG307, RF267AE/AF/AZ, RFG237/293/295/297AA/AB/AC
- Power Freeze + Fridge for RSG257, RF263AE/AF, RF265AD, RF266AD/AE/AF
- Lighting + Fridge for RS265TD / 267TD
- Energy Saver + Power Cool for RF4287



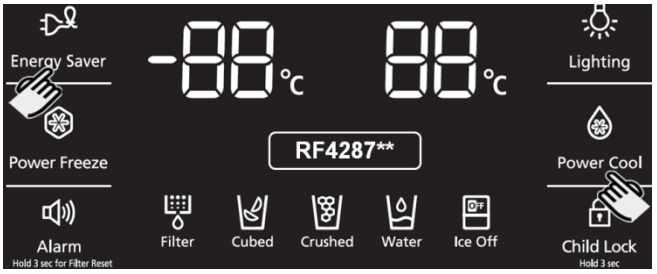


Press Freezer/or Fridge Key once during Test Mode to start the Forced Operation 1. “FF-1”

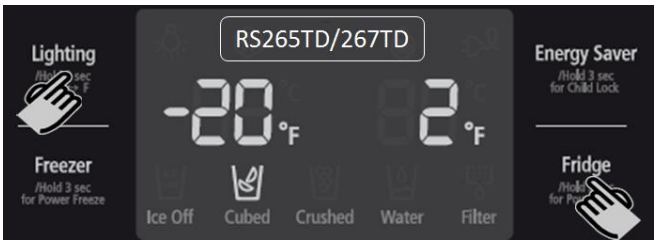
Press Freezer/or Fridge Key twice during the Test Mode to start the Forced Operation 2. “FF-2”



Press Freezer/or Fridge Key 3 times during Test Mode to start the Forced Operation 3. “FF-3”



Press Freezer/or Fridge Key 4 times during Test Mode to start Forced Defrost for both freezer and fridge compartments. “Fd”



Press Freezer/or Fridge Key one more time for cancellation Test Mode

Manual Operation & Test Mode Part 10

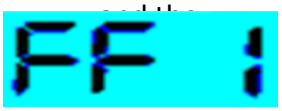
- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).
- Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, the unit will operate in the following sequence; Forced Freezing 1 (FF-1) → Forced Freezing 2 (FF-2) → Forced Freezing 3 (FF-3)→ Forced defrost of both freezer & refrigerator (Fd) → Cancel (Displays turned off).
- All test modes can run for 24 hours maximum but the display will change back to normal display a fter 20 seconds. Alarm will beep constantly with various sounds depending on the chosen test seque nce steps. There is no way to stop the alarm during manual operation.

1. Forced Freezing Mode

For the units that equipped with an inverter compressor, there are 3 Forced Freezing Modes and the inverter (3 speed) compressor will run at different speed at different mode.

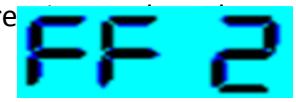
1-1. Forced Freezing Mode 1 (FF-1)

Press either Freezer or Fridge keys once in Manual Operation Mode, display will blink “FF-1” and this indicates that the refrigerator has entered the first Forced Freezing Mode compressor is running at 3600 RPM (full speed).



1-2. Forced Freezing Mode 2 (FF-2)

Press either Freezer or Fridge keys twice in Manual Operation Mode, display will blink “FF-2” and this indicates that the refrigerator has entered the second Forced Fre the compressor is running at 2450 RPM (mid speed).



1-3. Forced Freezing Mode 3 (FF-3)

Press either Freezer or Fridge keys three times in Manual Operation Mode, display will blink “FF-3” and this indicates that the refrigerator has entered the third Forced and the compressor is running at 2050 RPM (low speed).

Once the Forced Freezing Mode is selected (FF-1, FF-2, FF-3), ccompressor will start to run at once without 5 minutes delay. Compressor, and all fans will operate continuously until the freezer reaches the lowest temperature setting. Forced Freezing Mode will run for 24 hours then unit will back to normal operation. During the Forced Freezing Mode , both freezer and fresh food compartment will be controlled by the lowest temperature setting. Freezer compartment -14°F (-25°C), Fridge compartment 32°F (1°C).

2. Forced Defrost Mode

Press either Freezer or Fridge keys four times in Manual Operation Mode within 15 display will blink “Fd” and this indicates that the refrigerator has entered the Forc Defrost Mode for both fridge and freezer. Both compartments will be defrosted.

To change/cancel a test step, hold down following buttons simultaneously for 8 Seconds again,

- Freezer + Fridge for RM257
- Energy Saver + Fridge for RSG307, RF267AE/AF/AZ, RFG237/293/295/297AA/AB/AC
- Power Freeze + Fridge for RSG257, RF263AE/AF, RF265AD, RF266AD/AE/AF
- Lighting + Fridge for RS265TD / 267TD
- Energy Saver + Power Cool for RF4287

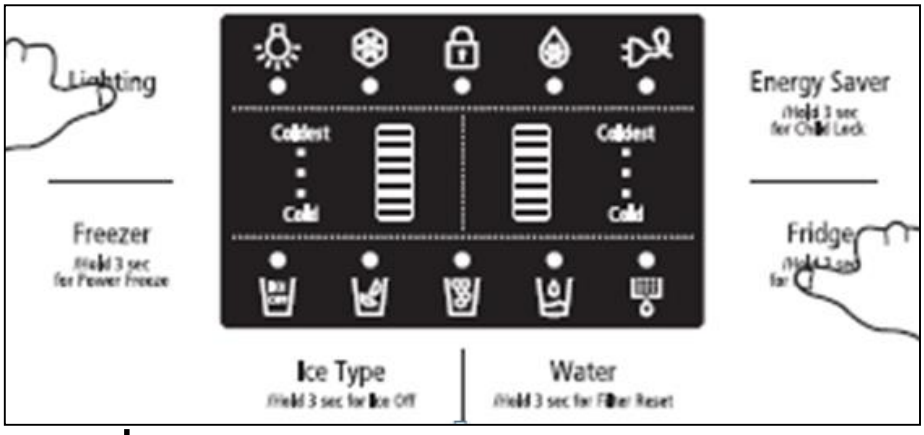
testing modes will be displayed. Press either Freezer or Fridge Keys to choose the desired test step or to cancel the test mode within 15 seconds.

Or simply unplug the power cord, then plug it back, unit will return to normal operation.

- If no key is pressed within 15 seconds after entering test mode, the test will be cancelled and unit will r eturn to normal operation.

Manual Operation & Test Mode Part 11 For RS263TD

Manual Operation & Test Mode can be used to force the unit to start or defrost. Hold down Lighting + Fridge buttons simultaneously for 8 seconds to enter the Mode.



Press Freezer/or Fridge Key one more time for cancellation.

Cancellation

Forced Operation → ***Forced Defrost for Fridge*** → ***Forced Defrost for both compartment***

Press Freezer/or Fridge Key once during Test Mode

Press Freezer/or Fridge Key twice during the Test Mode

Press Freezer/or Fridge Key 3 times during Test Mode

- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).
- Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, the unit will operate in the following sequence; Forced Freezing → Forced defrost of refrigerator section → Forced defrost of both freezer & refrigerator → Cancel (Displays turned off).
- All test modes can run for 24 hours maximum but the display will change back to normal display 20 seconds after entering the test mode. Alarm will beep constantly with various s ounds depending on the chosen test sequence steps. There is no way to stop the alarm during manual operation.

To change/cancel a test step, hold down Lighting + Fridge buttons simultaneously for 8 seconds again, testing modes will be displayed. Press either Freezer or Fridge Keys to choos e the desired test step or to cancel the test mode within 15 seconds.

Or simply unplug the power cord, then plug it back, unit will return to normal operation.

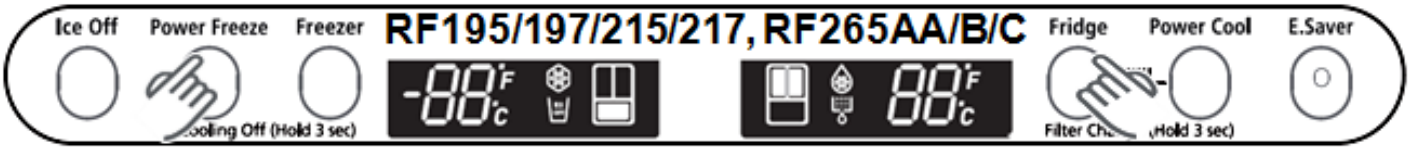
- If no key is pressed within 15 seconds after entering test mode, the test will be cancelled a nd unit will return to normal operation.

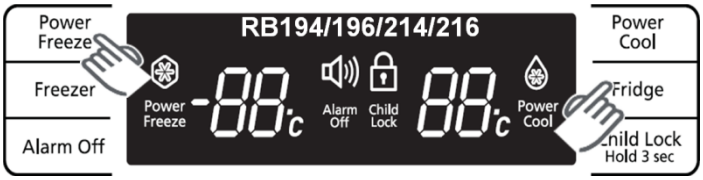
Manual Operation & Test Mode Part 12

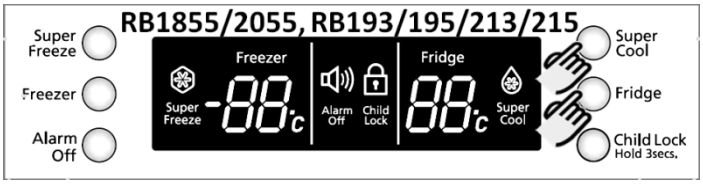
RM255, RB1855/1955/2055/2155, RB193/195/213/215
RB194/196/214/216, RS2555, RS257/265/267/269/275/277,
RF195/197/215/217, RF265AA/AB/AC, RF267AA/AB

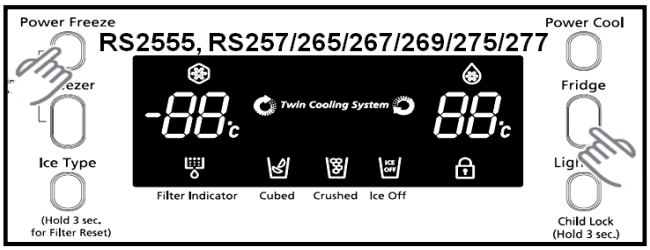
Manual Operation & Test Mode can be used to force the unit to start or defrost. Hold down the following buttons simultaneously for 8 seconds to enter the Mode.

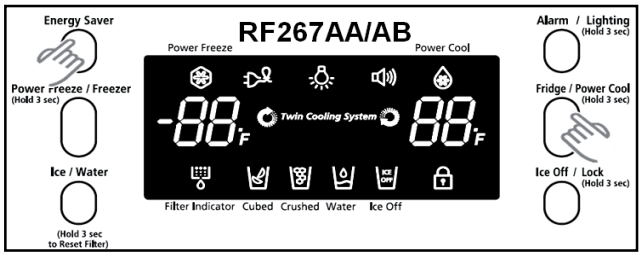
- **Quick/Super Cool + Fridge for RB1855 / 2055, RB193 / 213, RB195 / RB215**
- **Power Freeze + Fridge for RB194/196/214/216, RF195/197/215/217, RF265AA/AB/AC**
  RS2555, RS257 / 265 / 267 / 269 / 275 / 277
- **Energy Saver + Fridge for RF267AA/AB**
- **Freezer + Fridge for RM255**

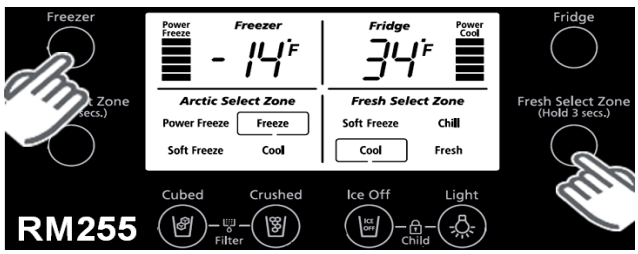












Press Freezer/or Fridge Key once during Test Mode to start the Forced Operation. “FF”

↓

Press Freezer/or Fridge Key twice during the Test Mode to start the Forced Defrost for fridge section only. “rd”

↓

Press Freezer/or Fridge Key 3 times during Test Mode Forced Defrost for both freezer and fridge compartments. “Fd”

↓

Press Freezer/or Fridge Key one more time for cancellation Test Mode

Manual Operation & Test Mode Part 12

- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).
- Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, the unit will operate in the following sequence; Forced Freezing (FF) → Forced defrost of refrigerator section (rd) → Forced defrost of both freezer & refrigerator (Fd) → Cancel (Displays turned off).
- All test modes can run for 24 hours maximum but the display will change back to normal display after 20 seconds. Alarm will beep constantly with various sounds depending on the chosen test sequence steps. There is no way to stop the alarm during the test.

1. Forced Freezing Mode

Press either Freezer or Fridge Keys once in Manual Operation Mode, display will blink "FF" and this indicates that the refrigerator has entered the Forced Freezing Mode. Compressor is running at once without 5 minutes delay. Compressor, and all fans will operate continuously until the freezer reaches the lowest temperature setting. FF mode will run for 24 hours then unit will back to normal operation. During the FF Mode, both freezer and fresh food co controlled by the lowest temperature setting. Freezer compartme Fridge compartment 32°F(1°C).

2. Forced Defrost Mode

2-1) Forced Defrost Mode (fridge only)
Press either Freezer or Fridge Keys twice in Manual Operation Mode within 15 seconds, display will blink “rd” and this indicates the refrigerator has entered the Forced Defrost Mode for fridge section.
Fridge compartment only will be defrosted.
(Fridge and CR sections will be defrost for RM255)

2-2). Forced Defrost Mode (both fridge and freezer)

Press either Freezer or Fridge Keys three times in Manual Operation Mode within 15 seconds, display will blink “Fd” and this indicates the refrigerator has entered the Forced Defrost Mode for both fridge and freezer.
Both fridge and freezer compartments will be defrosted.

3. Cancellation

To change/cancel a test step, hold down the following buttons simultaneously for 8 seconds again,

- **Quick/Super Cool + Fridge for RB1855/1955/2055/2155, RB213, RB195 / RB215**
- **Power Freeze + Fridge for RB194/196/214/216, RF195/197/215/217/265, RS2555, RS257/265/267/269/275/277**
- **Energy Saver + Fridge for RF267**
- **Freezer + Fridge for RM255**

testing modes will be displayed. Press either Freezer or Fridge Keys to choose the desired test step or to ca ncel the test mode within 15 seconds.

Or simply unplug the power cord, then plug it back, unit will return to normal operation.

- If no key is pressed within 15 seconds after entering test mode, the test will be cancelled and unit will ret urn to normal operation.

Manual Operation & Test Mode Part 13

RH22H90**, and RL34***

Manual Operation & Test Mode can be used to force the unit to start or defrost. Hold down the following buttons simultaneously for 8 seconds to enter the Mode.

- **Freezer + Alarm for RH22H90****
- **Super Freeze + Fridge for RL34*****

Forced Operation	***Forced Defrost for Freezer***	***Cancellation***
Press Freezer/or Fridge Key once during Test Mode	Press Freezer/or Fridge Key twice during the Test Mode	Press Freezer/or Fridge Key 3 times to cancel the test

- Once in the Manual Operation/Test Mode, all displays on the control panel will be turned off with a sound of beeping (Ding-Dong).
- Press either Freezer or Fridge key on the control panel within 15 seconds after entering the Test Mode, unit will operate in the following sequence; Forced Freezing → Forced Defrost → Cancel (Displays turned off).
- All test modes can run for 24 hours maximum but the display will change back to normal display 20 seconds after entering the test mode. Alarm will beep onstantly with various sounds depending on the chosen test sequence st ps. There is no way to stop the alarm during manual operation.

To change / cancel a test step, hold down the following buttons simultaneously for 8 seconds again,

- Freezer + Alarm for RH22H90**
- Super Freeze + Fridge for RL34***

testing modes will be displayed. Press either Freezer or Fridge Keys to choose the desired test step o r to cancel the test mode within 15 seconds.

Or simply unplug the power cord, then plug it back, unit will return to normal operation.

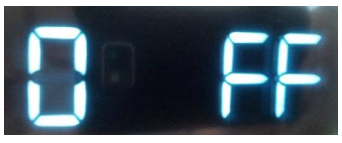
- If no key is pressed within 15 seconds after entering test mode, the test will be cancelled and unit will return to normal operation.

Cool Off / Exhibition / Demo mode

Cool Off / Exhibition / Demo mode is used for retailer stores. Once the Demo mode is selected, all functi on including display, fan motor, etc will operate normally except the compressor which will not operate.

Hold down the following buttons simultaneously for 3 ~ 5 seconds to switch between normal operation and Cool Off / Exhibition / Demo mode.

- **Freeze + Super Freeze for Freeze + Power (Super) Freeze for the following models:**
  RB193/195/213/215, RL220, RL34*, RB194/196/214/216**
  RS253/255/257/265/267/269/275/277, RS2555, RSG257, RS2530/2630, RS22H**
  RF195/197/215/217/260/261/265/266, RFG293, RF263A*, RF18/20HF*, RF26HFE*
- **Power Freeze/Freezer + Energy Saver for RF263BE/TE*, RFG297A*, RF267***
- **Freezer + Energy Saver for RS263/265/267TD***
- **Freezer + Fridge + Door Alarm for RF34**, RF23J9011SR*, R28JBEDB*, RF28K9070*, RF23M80***
- **Freezer + Alarm for RF23H*, RF25H*, RF28H*, RF30H**, RF26J7500, RF22K****
- **Freezer + Energy Saver for RF4267/4287*, RFG297HD*, RFG29PH, RSG307, RF323TE**
- **Power Freeze + Freezer + Fridge for RT18/21M80***
- **Ice Off + Freezer for RF220/221***
- **CoolSelect + Freezer for RF32FM****
- **Freezer + Lighting for RH22H90****
- **Arctic Select Zone + Freezer for RM255/257****



If above Keys are held down simultaneously for 3 ~ 5 seconds during normal operation, Cool Off / Exhibition / Demo mode will start with buzzer sound ("Ding-dong").

1. For those models with regular number display, the display will show "OF-OF" or “O FF” once the Cool Off / Exhibition / Demo mode is selected.
2. For those models LED bar code display, if Exhibition mode is selected, the temperature setting LED bars will light up sequentially (F7 → F6 → F5 → F4 → F3 → F2 → F1, R7 → R6→ R5 → R4 → R3 → R2 → R1).

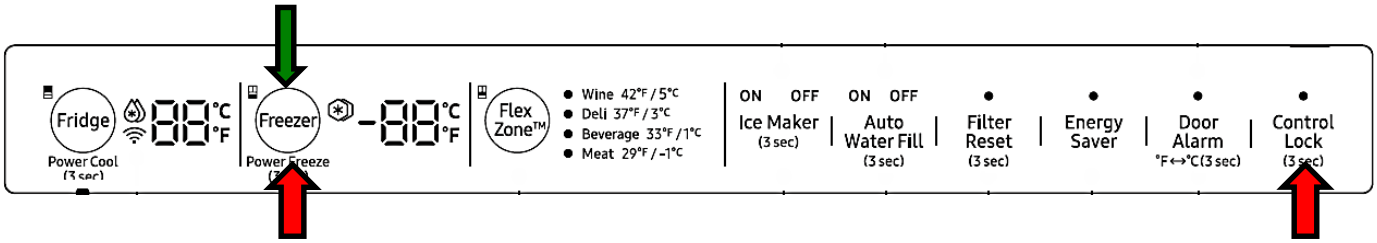
Cool Off / Exhibition / Demo mode will be saved by PCB. It will be operated again once power back after the power failure.

To cancel/release the Demo mode, hold down above Keys for 3 ~ 5 seconds again, the exhibition / display mode will be canceled.

If the temperature of any compartments are higher than 149°F (65°C) during Demo mode, exhibition / display mode will be canceled automatically and cooling operation will begin.

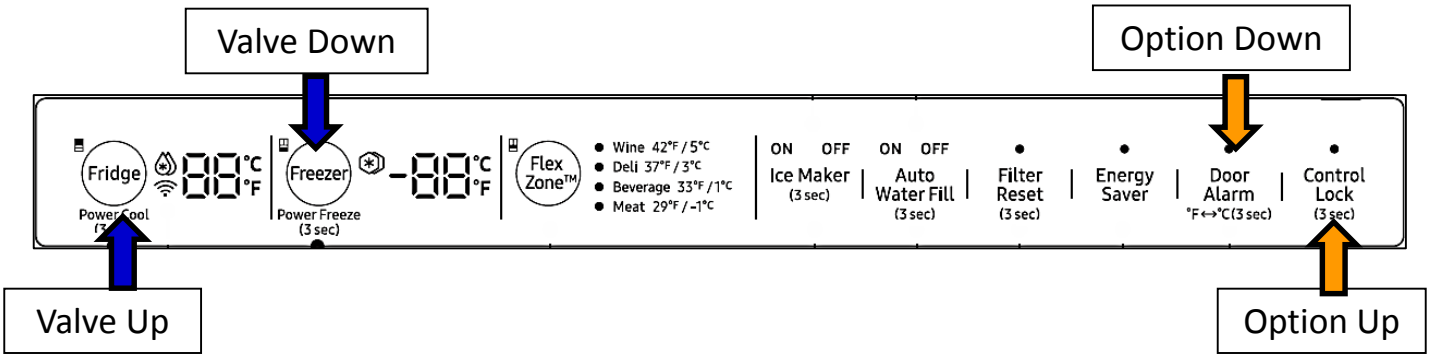
Calibration Mode for RF34H99**, RF23M80**

The main purpose of Option Setting Mode (Calibration Mode) is to shift (increase / decrease) the temperature internally (Refer to the data changing tables).
e.g. If the current temperature setting of the Freezer compartment is -19℃, lowering the temperature setting by 2˚C in this mode, it shifts the unit to operate at -21℃ internally, although -19℃ is showing on the display panel.



1. Hold down **Freezer + Control Lock** buttons simultaneously for 6 seconds during normal operation, the entire display will blink for 4 seconds at the interval of 0.5 second.

2. During the 4 seconds display panel blinking period, release the control Lock and Freezer keys and then press the Freezer key to switch to option setting mode (Calibration Mode).



Once in the Calibration Mode, the following keys will function as Calibration Key for calibration. Those two keys on right side will function as “Reference Code Change” keys, and those two keys on the left side will function as “Value Shift” Keys.

Control Lock Key Key will be “Option Code Up” key and Door Alarm Key will be “Option Code Down” key. These two keys can be used to choose the compartment that needs to be calibrated. The corresponding reference LED bars will be shown on the fresh food compartment display. e.g. “0” refer to freezer compartment and “1” refer to refrigerator compartment. (Refer to the Temp Shift Chart).

Fridge Key will be “Value Shift Up” key and Power Freeze Key will be “Value Shift Down” key. These two keys can be used to choose the desired temperature shift. The reference number will be shown on the freezer compartment display. From “0” to “15” and the maximum calibration range is +/- 4°C.
(Refer to the Temp Shift Chart).

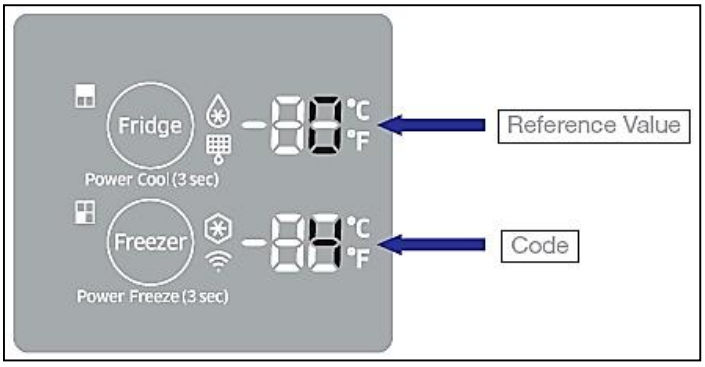
Calibration Mode for RF34H99**, RF23M80**

Freezer Compartment Temperature Shifting Table

Shift Item	Freezer
Option Code	0

Shift Code	Temp. Shift
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃

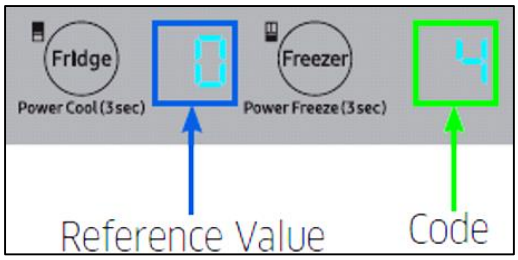
ex) If you want to shift the freezer standard temperature by 2℃ lower.

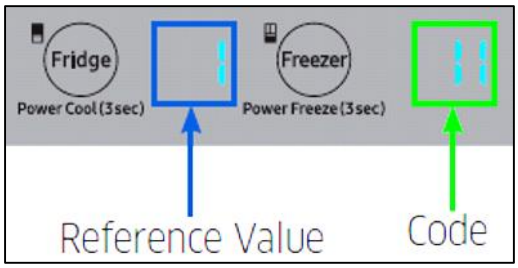


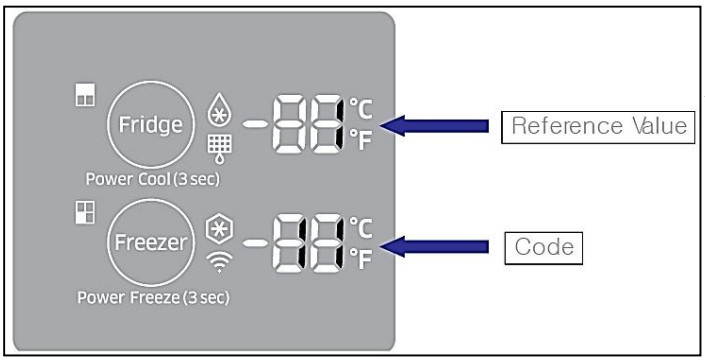
Fresh Food Compartment Temperature Shifting Table

Shift Item	Refrigerator
Option Code	1

Shift Code	Temp. shift
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃



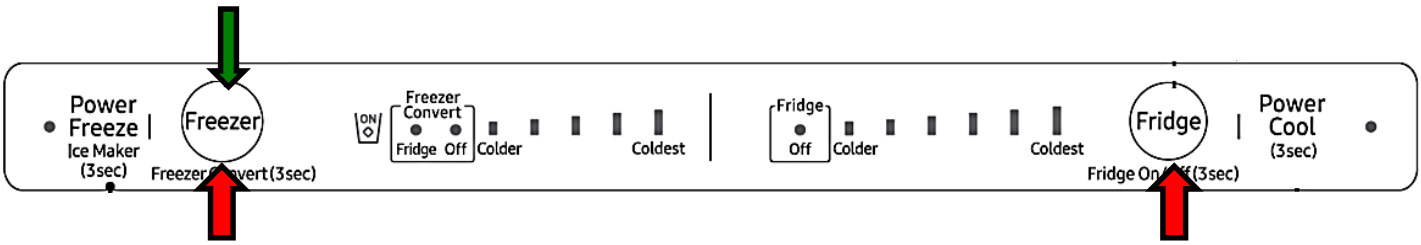




ex) If you want to shift the fresh food compartment standard temperature by 2℃ higher

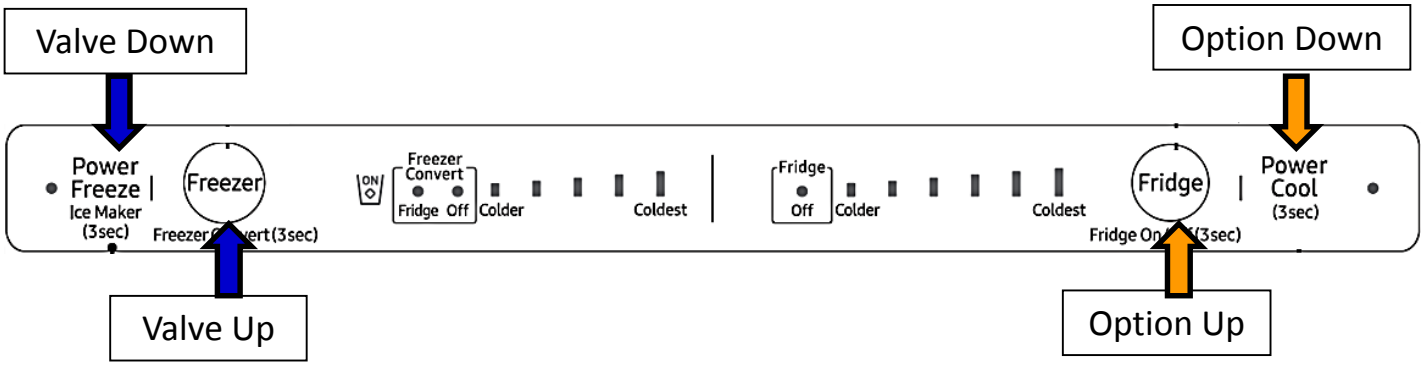
Calibration Mode for RT18/21M80*

For RT18/21M80* TMF, the temperature setting is displayed by LED bars. The numbers of light up LEDs indicate the temperature setting instead of the real number. The LED arrangements from bottom to top, left to right for RS2630, and low to high for RF220/221. Follow the Binary Number Role. e.g. 0000 –0(Lowest), 0001—1, 0010—2, 0011-3… See next page.



1. Hold down **Freezer + Fridge** buttons simultaneously for 4 seconds during normal operation, the entire display will blink for 3 seconds at the interval of 0.5 second.

2. During the 3 seconds display panel blinking period, release the **Fridge** and **Freezer** keys and then press the **Fridge** key to switch to option setting mode (Calibration Mode) with a "Ding-Dong" sound.



Once in the Calibration Mode, the following keys will function as Calibration Key for calibration. Those two keys on fridge temperature control side (right side keys) will function as “Reference Code Change” keys, and those two keys on the freezer temperature control side (left side keys) will function as “Value Shift” Keys.

Fridge Key will be “Option Code Up” key and Power Cool Key will be “Option Code Down” key. These two keys can be used to choose the compartment that needs to be calibrated. The corresponding reference LED bars will be shown on the fresh food compartment display. e.g. “0”(no bar lights up) refer to freezer compartment and “1” (1 bar lights up)refer to refrigerator compartment. (Refer to the Temp Shift Chart).

Freezer Key will be “Value Shift Up” key and Power Freeze Key will be “Value Shift Down” key. These two keys can be used to choose the desired temperature shift. The reference number will be shown on the freezer compartment display. From “0”(no bar lights up) to “15”(All 5 bars light up) and the maximum calibration range is +/- 4°C. (Refer to the Temp Shift Chart).

Calibration Mode for LED bar display style

LED Bar display Code Value Table (○: Relevant LED OFF, ●: Relevant LED ON)

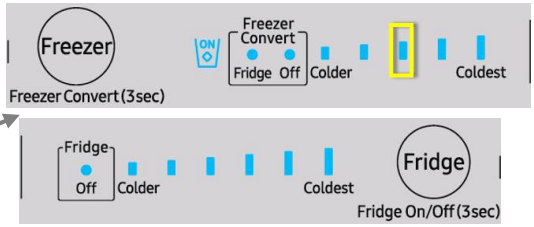
LED Bar	Code Value																		
L1~L7	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	○	●	○	●	○	●	○	●	○	●	○	●	●	○	●	○	●	○	●
2	○	○	●	●	○	○	●	●	○	○	●	●	○	●	●	○	○	●	●
3	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	○	○	○	○
4	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	○	○	○	○
5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●
6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
7	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

1) Freezer Compartment Temperature Shifting Table

Shift Item	Freezer
Option Code	0

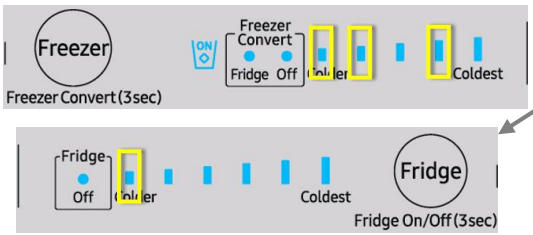
Shift Code	Temp. Shift
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃

ex) If you want to shift the freezer standard temperature by 2℃ lower.



Fridge	No bar

ex) If you want to shift the fresh food compartment standard temperature by 2℃ higher



Fridge	One bar

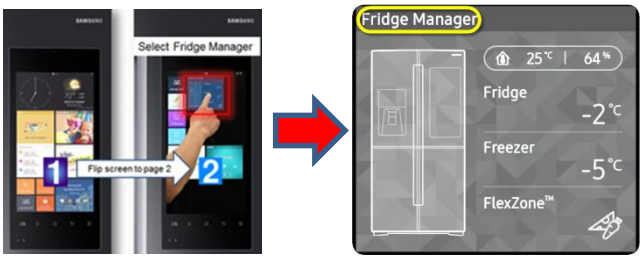
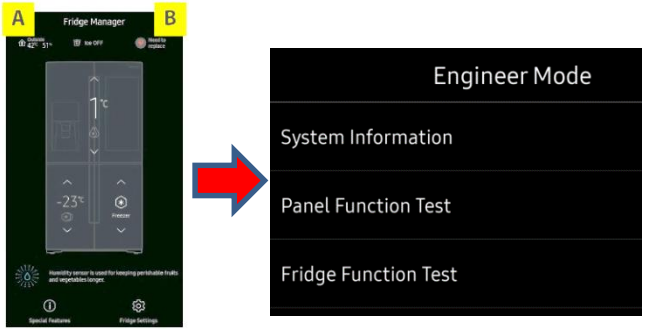
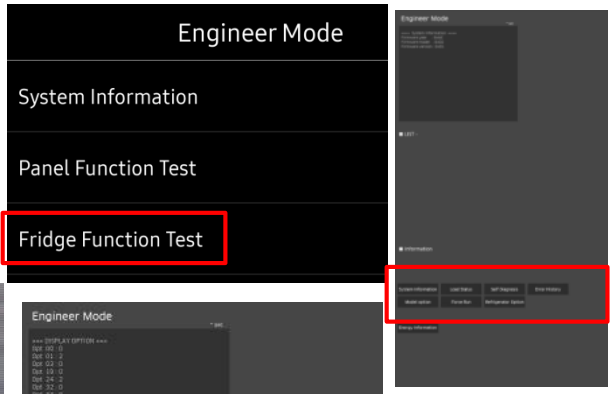
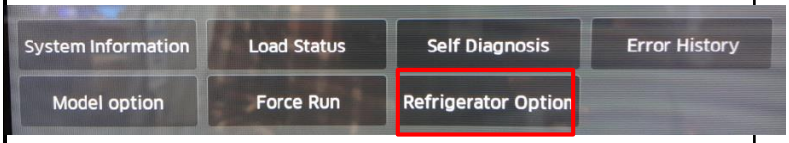
2) Fresh Food Compartment Temperature Shifting Table

Shift Item	Refrigerator
Option Code	1

Shift Code	Temp. shift
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃

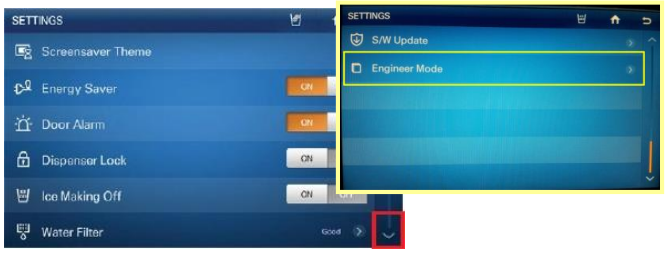
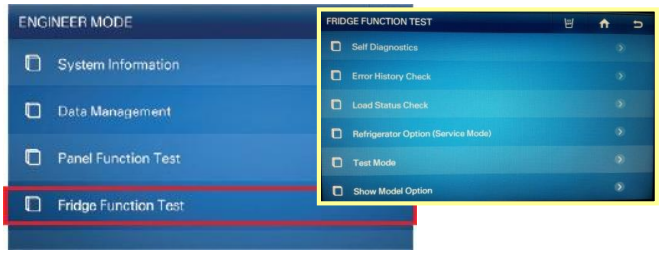
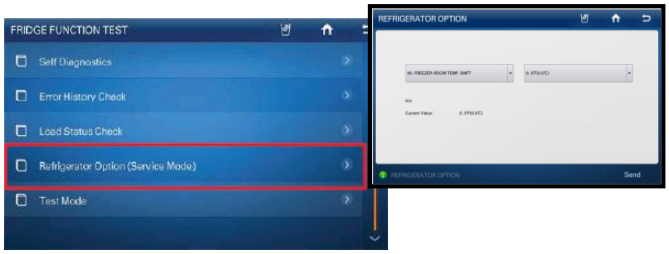
Calibration Mode for RF28K95**, RF265B**, RF22M9581**

The main purpose of Option Setting Mode (Calibration Mode) is to shift (increase / decrease) the temperature internally (Refer to the data changing tables).
e.g. If the current temperature setting of the Freezer compartment is -19℃, lowering the temperature setting by 2°C in this model shifts the unit to operate at -21℃ internally, although -19℃ is showing on the display panel.

Sequence	Note
① Swipe the Home screen to the left to see the second display screen. Tap “Fridge Manager” to set the unit to the Fridge Manager Home Page. (The fridge temperature and options are displayed)	
② Tap "A" and "B" area as sequence of “A-B-A-B-A-B” on the display screen within 3 seconds, "Engineer Mode enable” message will be displayed as the popping up message and the display will change to the “Engineer Mode”.	
③Tap “Fridge Function Test” and then tap “Refrigerator Option” from the pop up screen to enter the Calibration Mode.	 
④ Tap the desired compartment option and shift value option from the pop up “Refrigerator Option” screen. E.g. 00 for freezer temp shift, 01 for refrigerator temp shift. Tap the “Save Option” button on the end of the option list to save the calibration options.	

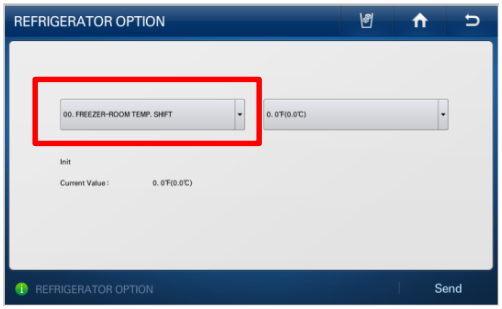
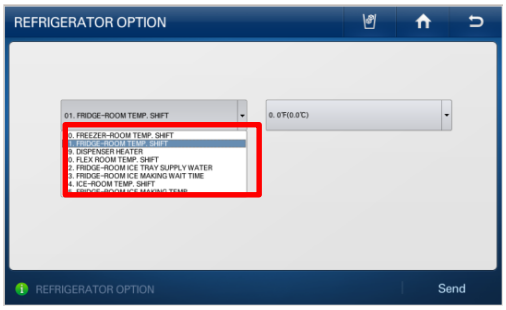
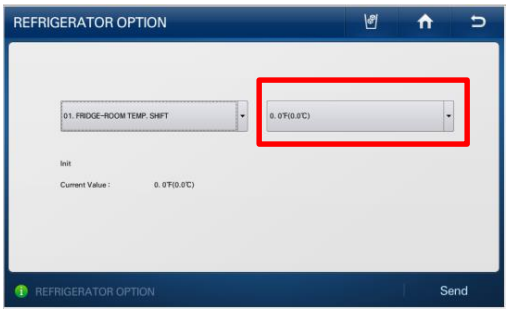
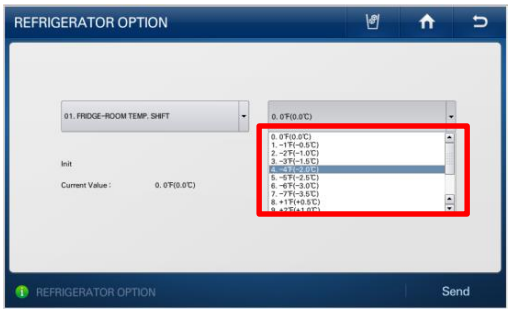
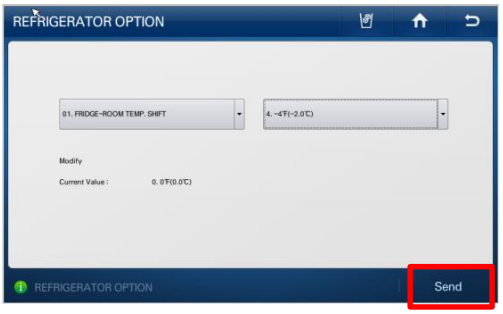
Calibration Mode for RF4289, RS27FD, RF28HMEL

The main purpose of Option Setting Mode (Calibration Mode) is to shift (increase / decrease) the temperature internally (Refer to the data changing tables).
e.g. If the current temperature setting of the Freezer compartment is -19℃, lowering the temperature setting by 2°C in this model shifts the unit to operate at -21℃ internally, although -19℃ is showing on the display panel.

Sequence	Note
① Tap "A" and "B" area as sequence of "A-B-A-B-A-B" on the display screen within 3 seconds, "Engineer Mode enable" message will be displayed for 1 second on the popping up window and then disappear.	
② After the "Engineer Mode enabled" message been displayed, touch the "Settings" Icon, the Setting window will be displayed.	
③ Continue to touch the Down Arrow Icon to scroll down the list of the Setting window until see "Engineer Mode", tough the "Engineer Mode" to enter the Engineer Mode .	
④ Touch the "Fridge Function Test" from Engineer Mode window to enter the Fridge Function Test Mode.	
⑤ Touch the "Refrigerator Option (Service Mode)" from the Engineer Mode to enter the Refrigerator Option (Service Mode).	

** All the data in option window has cleared in the factory. Therefore, almost all of the setting values are "0".
Some of the setting values could be changed for performance improving purpose.

Calibration Mode for RF4289, RS27FD, RF28HMEL

Sequence	Note
⑥ Touch the "FREEZER-ROOM TEMP. SHIFT" box Icon from the Refrigerator Option (Service Mode) window to open the calibration Item list window.	
⑦ Choose the compartment /item that needs to be calibrated from the calibration Item list window, e.g. "FRIDGE-ROOM TEMP. SHIFT" on the list.	
⑧ Touch the "0℉(0.0℃)" box Icon from the Refrigerator Option (Service Mode) window to open the “Value Shift List Window”.	
⑨Choose the desired temperature /value shift from the Value Shift List Window. e.g. "-4℉ (-2.0℃)" on the list.	
⑩ Touch the "Send" Icon from the Refrigerator Option (Service Mode) window to save the calibration.	

Calibration Mode for regular display style

The main purpose of Option Setting Mode (Calibration Mode) is to shift (increase / decrease) the temperature internally (Refer to the data changing tables).
e.g. If the current temperature setting of the Freezer compartment is -19℃, lowering the temperature setting by 2˚C in this mode, it shifts the unit to operate at -21℃ internally, although -19℃ is showing on the display panel.

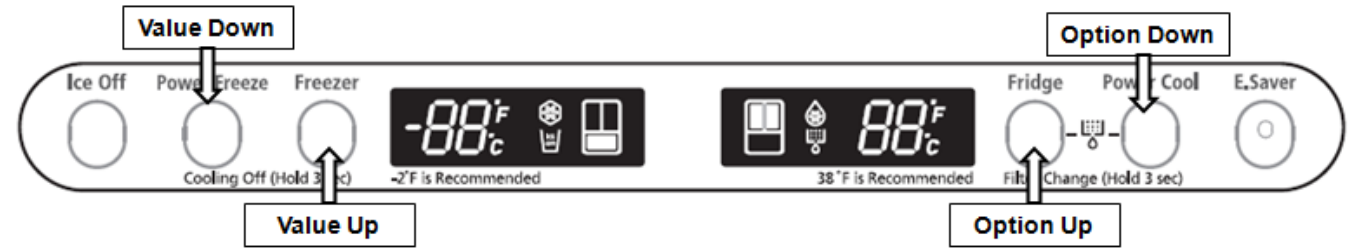
Hold down the following buttons simultaneously for 12 seconds during normal operation to switch to option setting mode. (Calibration Mode)

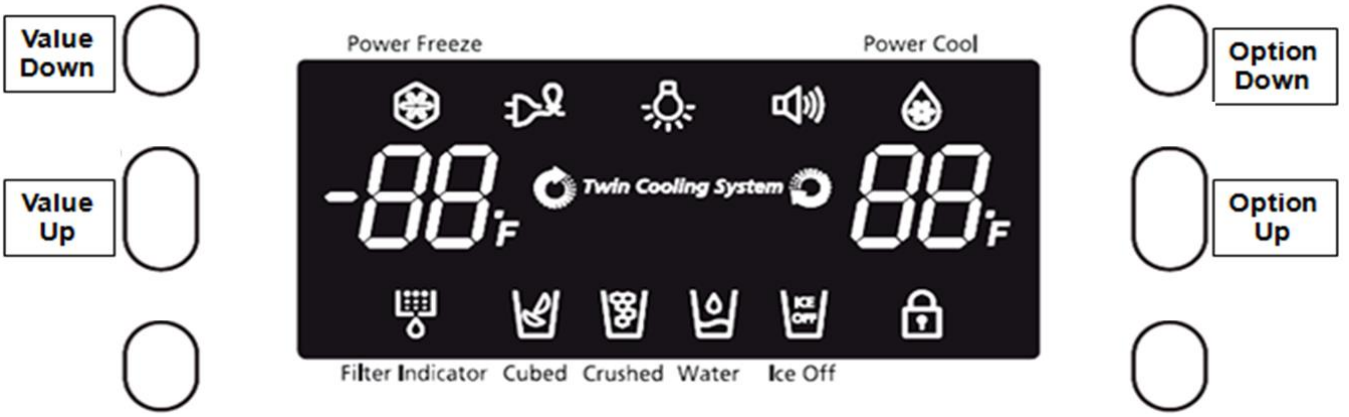
- **Freeze + Super Cool for RB193/195/213/215**
- **Freeze + Power Cool for RB194/196/214/216**
  RS253/255/257/265/267/269/275/277, RS2555, RSG257
  RF195/197/215/217/260/261/265/266, RFG293, RF263A
  RF18/20HFE*, RF26HFE*
- **Freezer + Energy Saver for RS263/265/267TD, RF220/221, RF32FM**
- **Freezer + Alarm for RL220**
- **Freezer + Lighting for RSG307, RF4267, RF323TED, RFG297HD, RFG29PH, RS22HDH**
- **Freezer + Filter Reset for RS2630/2530**
- **Power Freeze + Lighting for RF4287, RF31****
- **Alarm + Fridge for RF22KR, RF23HT*, RF23HC*, RF23HS*, RF28HF*, RF23J9011SR***
  RF25HM*, RF28HM*, RF28JB* RF30HB*, RF26J7500, RF28K9070*
- **Power Freeze/Freezer + Alarm/Lighting for RF263BE/TE, RFG297AA/AB/AC, RF267**
- **Arctic Select Zone + Fridge for RM255/257**
- **Lighting + Fridge for RH22H90****

Once in the Option Setting Mode (Calibration Mode), the following keys will function as Calibration Key for calibration. Those two keys on fridge temperature control side (right side keys) will function as “Reference Code Change” keys, and those two keys on the freezer temperature control side (left side keys) will function as “Value Shift” Keys. The key name might be variable depends on models. However, we can simply focus on the key position instead.

1) For those French Door Fridges such as RF26HF** that with top table control panel:
   - Power Cool Key (outer) will be “Option Code Down” key and Fridge Key (inner) will be “Option Code Up” key. These two keys can be used to choose the compartment that needs to be calibrated. The corresponding reference number will be shown on the fresh food compartment display. e.g. “0” refer to freezer compartment and “1” refer to refrigerator compartment. (Refer to the Temp Shift Chart).
   - Power Freezer Key (outer) will be “Value Shift Down” key and Freezer Key (inner) will be “Value Shift Up” key. These two keys can be used to choose the desired temperature shift. The corresponding reference number will be shown on the freezer compartment display. From “0” to “15” & the maximum calibration range is +/- 4°C. (Refer to the Temp Shift Chart).
2) For rest of Fridges such as RF28JB* with control panel on the door:
   - Top Right Key will be “Option Code Down” key and Middle Right Key will be “Option Code Up” key. These two keys can be used to choose the compartment that needs to be calibrated. The corresponding reference number will be shown on the fresh food compartment display. e.g. “0” refer to freezer compartment and “1” refer to refrigerator compartment. (Refer to the Temp Shift Chart).
   - Top Left Key will be “Value Shift Down” key and Middle Left Key will be “Value Shift Up” key. These two keys can be used to choose the desired temperature shift. The reference number will be shown on the freezer compartment display. From “0” to “15” and the maximum calibration range is +/- 4°C. (Refer to the Temp Shift Chart).

Calibration Mode for regular display style





1) Freezer Compartment Temperature Shifting Table

Shift Item	Freezer
Option Code	0

Shift Code	Temp. Shift
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃

ex) If you want to shift the freezer standard temperature by 2℃ lower.

ex) If you want to shift the fresh food compartment standard temperature by 2℃ higher

2) Fresh Food Compartment Temperature Shifting Table

Shift Item	Refrigerator
Option Code	1

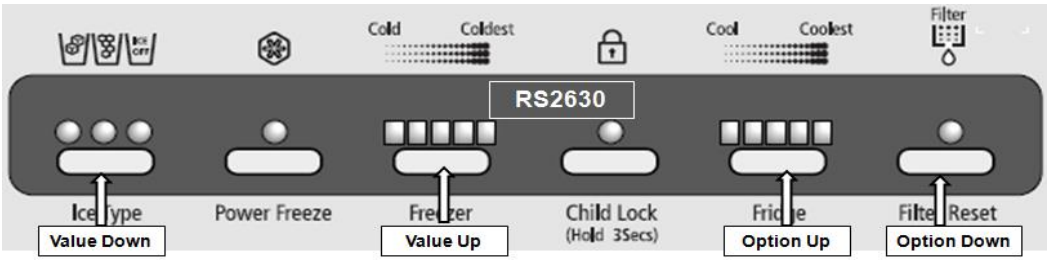
Shift Code	Temp. shift
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃

Calibration Mode for LED bar display style

For RF220/221 French door , RS2530/2630 and RS263TD side by side fridges, the temperature setting is displayed by LED bars. The numbers of light up LEDs indicate the temperature setting instead of the real number. The LED arrangements from bottom to top, left to right for RS2630, and low to high for RF220/221. Follow the Binary Number Role. e.g. 0000 –0(Lowest), 0001—1, 0010—2, 0011-3… See next page.

Hold down the following buttons simultaneously for 12 seconds during normal operation to switch to option setting mode. (Calibration Mode)

- **Freezer + Energy Saver for RF220/221**
- **Freezer + Filter Reset for RS2630/2530**
- **Freezer + Alarm for RL220**



Once in the Calibration Mode, the following keys will function as Calibration Key for calibration. Those two keys on fridge temperature control side (right side keys) will function as “Reference Code Change” keys, and those two keys on the freezer temperature control side (left side keys) will function as “Value Shift” Keys.

e.g. for RF220/221, Fridge Key will be “Option Code Up” key and Energy Saver Key will be “Option Code Down” key. These two keys can be used to choose the compartment that needs to be calibrated. The corresponding reference LED bars will be shown on the fresh food compartment display. e.g. “0”(no bar lights up) refer to freezer compartment and “1” (1 bar lights up)refer to refrigerator compartment. (Refer to the Temp Shift Chart).

Freezer Key will be “Value Shift Up” key and Ice Off Key will be “Value Shift Down” key. These two keys can be used to choose the desired temperature shift. The reference number will be shown on the freezer compartment display. From “0”(no bar lights up) to “15”(All 5 bars light up) and the maximum calibration range is +/- 4°C. (Refer to the Temp Shift Chart).

Calibration Mode for LED bar display style

LED Bar display Code Value Table (○: Relevant LED OFF, ●: Relevant LED ON)

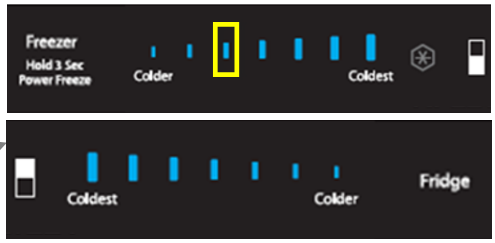
LED Bar	Code Value																		
L1~L7	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	○	●	○	●	○	●	○	●	○	●	○	●	●	○	●	○	●	○	●
2	○	○	●	●	○	○	●	●	○	○	●	●	○	●	●	○	○	●	●
3	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	○	○	○	○
4	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	○	○	○	○
5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●
6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
7	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

1) Freezer Compartment Temperature Shifting Table

Shift Item	Freezer
Option Code	0

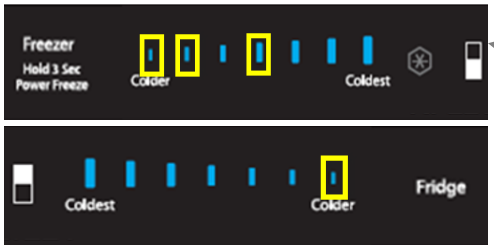
Shift Code	Temp. Shift
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃

ex) If you want to shift the freezer standard temperature by 2℃ lower.



Fridge	No bar

ex) If you want to shift the fresh food compartment standard temperature by 2℃ higher



Fridge	One bar

2) Fresh Food Compartment Temperature Shifting Table

Shift Item	Refrigerator
Option Code	1

Shift Code	Temp. shift
0	0.0℃
1	-0.5℃
2	-1.0℃
3	-1.5℃
4	-2.0℃
5	-2.5℃
6	-3.0℃
7	-3.5℃
8	+0.5℃
9	+1.0℃
10	+1.5℃
11	+2.0℃
12	+2.5℃
13	+3.0℃
14	+3.5℃
15	+4.0℃